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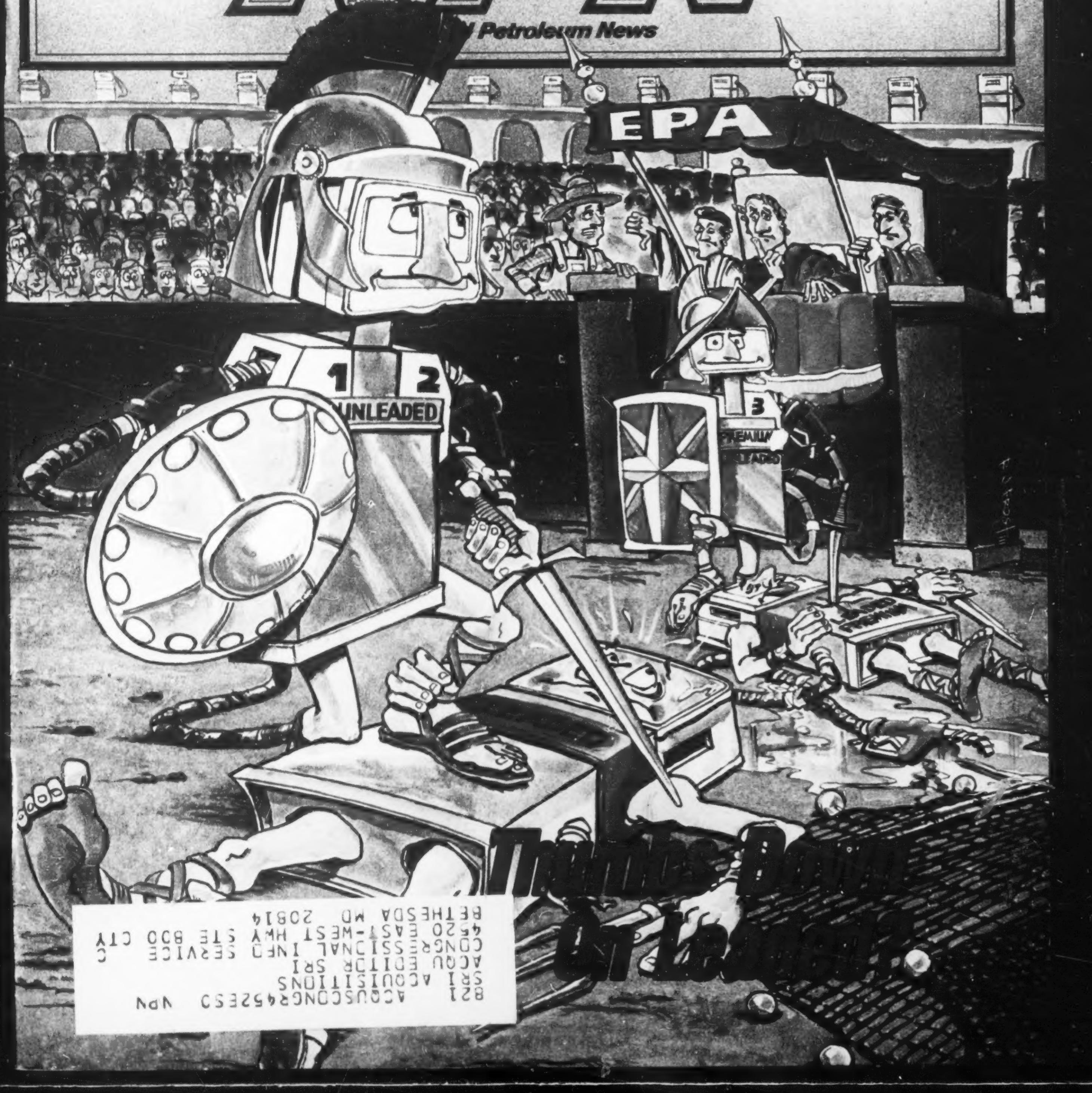
November 1986 **$5.00**

A New 'Y' Store Design for Extra Sales
No Letup in Phillips' Big Image Push
Why QuickTrip Sees Growth, Expansion a 'Must'

NPN

Petroleum News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NATIONAL PETROLEUM NEWS

NOVEMBER 1986 VOL. 78 NO. 11

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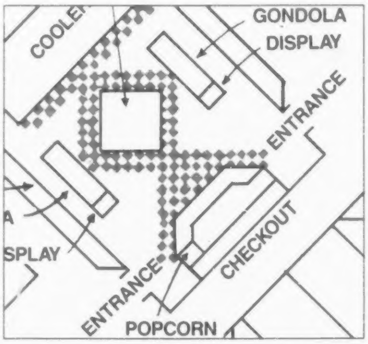
Is this the end of the line for leaded gasoline? The feds appear ready to give the "thumbs down" sign, but for many marketers, it remains the "fighting grade." What's in store? *Cover artwork by Ralph Frost III.* **Page 44**

QuikTrip
OPEN 24 HOURS

When people in Tulsa, Okla., think of C-stores, they generally think of QuickTrip. This highly successful chain is now entrenched in four markets and looking to expand. What's next? **Page 50**



Jim Dandy Markets has an innovative new design at three of its prime C-store locations in Nashville that it's betting will come up a winner. Here's a look at what went into it and 'Y.' **Page 56**

• TRENDS

Once Bane of Oil Men, DOE's "Star Wars" Pet

There's no question that most of the '70s and the early '80s were nightmare days (and nights) for just about everybody involved in the production, refining, transportation and marketing of petroleum. Mere mention of the acronyms DOE or ERA is enough to start some marketers shaking and quaking all over again.

It might come as a surprise to many of them then that DOE is no longer interested in their operations and their hides, and no longer a federal juggernaut to be feared and dreaded. DOE is well on the road to becoming a war agency of sorts in Washington.

U.S. News & World Report, a lively weekly that comments on both the domestic and international scenes, put its finger right on the button in a late September article entitled, "The DOE: The Pentagon's Adopted Little Brother." Think about the implications of that one!

DOE was created originally by the Carter Administration to be the cabinet agency that would conduct far-ranging control and regulatory programs, and would direct research and progress in everything from coal, hydropower and nuclear fission to windmills on farmlands and mountaintops. Things even got so silly at one time that some windmill operators were actually selling "excess power" to the utilities, like it or not. DOE all but blew the minds of fuel oil marketers when it straight-facedly proposed unrestricted substitution of electricity for distillates in spaceheating.

At its peak, DOE had a budget in excess of $15 billion a year and as many as 22,000 employees, with thousands of others in consultants' roles. It was the biggest federal bureaucracy that the nation has ever known. It was probably the greatest boon of all to the aspirin business, even eclipsing the traditional IRS agonies in mid-April (*NPN*—Sept. '79, p40).

Where marketers were concerned, 50,000 to 100,000 pages of regulations and controls stifled them at every turn. Often the regs were either so vague or so contradictory that no one in his right mind could abide by them and still stay in business. For the legal profession, the regulations were a treasure trove that literally guaranteed instant and long-term employment. Some of the cases are still banging around in the federal courts and various agencies, and it'll probably be the end of the decade, or even later, before all are phased out.

The fact that so many marketers somehow manage to survive everything DOE could dish out is probably the greatest testimonial yet to their innate toughness and resiliancy.

Be that as it may, when President Reagan came into office, civilian energy programs accounted for about 57% of the DOE budget. As the President decontrolled the industry and curtailed the majority of its high-flying operations, the budget money was projected into other areas of Administration concern.

In the elimination of some and the consolidation of other programs, DOE took over the Atomic Energy Commission. DOE's military budget rose from $3.6 billion in 1981 to $7.2 billion this year. These are peanuts in the overall Defense Department budget of $287 billion, yet they are intrinsically significant in their own right. This is the way *U.S. News & World Report* summed it up:

"The nation's three government-owned weapons laboratories, working under DOE supervision, are busily designing new nuclear warheads for futuristic cannons, depth charges and anti-aircraft and ballistic missiles. The agency detonates these nuclear weapons in huge underground cavities at its sprawling Nevada test site—a practice that Moscow and many lawmakers want stopped.

"By the same token, the DOE is the Pentagon's unheralded partner in the Strategic Defense Initiative (Star Wars) program. Research that it funds accounts for up to 15% of the budget on SDI this year. According to Assistant Energy Secretary Sylvester Foley, SDI is 'the No. 1 research-and-development project for the department.' "

Most Washington insiders are well aware of the transformation of DOE from a conservation-and-regulatory agency to its new role in the military. Said one: "All the old DOE has left now are the Energy Information Agency and the natural gas industry. When and if gas is decontrolled, the defense switch will probably become even more pronounced. This is a real backdoor coup for the Defense Department, no?" —*J. Richard Shaner*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

AUGUST	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$ .848	$ .778	$ .843	$ .999
Regions:				
Northeast	.853	.777	.828	.988
North Central	.836	.789	.837	.992
South	.827	.751	.820	.986
West	.881	.801	.883	1.042

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	10/3/86	10/4/85
Gasoline (total)	228,745	221,466
Gasoline (Unleaded)*	121,287	109,377
Jet Kerosine	42,780	35,276
Distillates	150,945	117,666
Residual	43,610	45,184

**Included in gasoline total.*

Source: American Petroleum Institute.

Study Shows Average Dealer Nearing $1 Million in Sales

They're fewer in number, and many of the survivors of the shakeouts of the 1970s and early 1980s still grouse about market conditions, supplier pressures, and so on. But, on the whole, the typical U.S. "conventional" service station dealer, circa 1986, has never had it so good, according to a recent Hunter Publishing Co. Micromarket study.

The average dealer, in fact, is within a small stone's throw of the $1 million plateau in annual sales, the new Micromarket survey shows.

Average gasoline volumes have also shown remarkable improvement, with monthly gallonages increasing by 82% since 1975.

Today's average station generates more than four times the dollar volume than the average station did a decade ago. In 1975, stations averaged $232,000 in annual dollar volume, including gasoline sales. In 1985 (the last full calendar year reported), the typical station had revenues of $973,000.

Annual dealer repair and service dollar volume has also kept pace with the upswing in his overall sales curve, the Micromarket study reports. Sales of parts and labor, the primary profit "stream" for many conventional dealers, jumped from an average of $50,800 in 1975 to $182,900 in 1985, almost a fourfold increase.

Interestingly, however, in 1975 service volume accounted for almost 22% of average station gross dollar volume. In 1985, backroom business amounted to 19% of total sales. This altered ratio of gasoline vs. service sales obviously reflects substantial increases in gasoline prices over the 10-year period.

Yet, since many dealers generate 40%-50% gross profit margins on "backroom" sales, the importance of the contribution of this category of sales to overall profitability is apparent.

Gasoline sales at conventional stations have traditionally been below average when compared to other types of outlets (pumpers, etc.). Since 1975 and through the early 1980s, average monthly throughputs hovered in the 35,000-45,000 gal./month range.

However, gallonages at conventional stations are beginning to improve rather dramatically, according to the Micromarket study. It reports that in 1985, the average station pumped 63,700 gal./month, an increase of 28,700 gal. or 82% over 1975.

Dealer Business Profile

	1985	1975
Average annual dollar volume, including gasoline sales	$973,000	$232,000
Average repair and service dollar volume	$182,900	$ 50,800
Average gallons of gasoline sold per month	63,700	35,000
Average number of full-time technicians	2.6	2.2
Average number of part-time technicians	1.4	1.6
Average number of full-time employees	4.4	3.0
Average number of part-time employees	2.9	*
Average number of service bays at station	2.9	*
Percentage of stations with car washes	14.9%	*
Average value of hand tools and equipment	$ 35,080	*
Average amount spent on hand tools and equipment in 1985	$ 8,270	*
ASE certifications		
All	8.3%	*
Some	25.7%	*
None	65.9%	*
Community in which station is located		
Rural	28.3%	20.3%
Suburb	31.1%	30.6%
City	40.6%	49.1%
Normal parts inventory		
$5000 to $10,000	59.4%	*
More than $10,000	40.6%	*
Where most parts are purchased		
Parts jobber	70.3%	*
Warehouse distributor	26.4%	*
Company TBA program	16.9%	*
Wagon jobber	8.7%	*
Used parts outlets	3.0%	*

Totals of more than 100% due to multiple mentions.
* No available data

The data generated by Hunter's Micromarket study provides a one-of-a-kind portrait of the conventional service station dealer. The information was compiled from a detailed nationwide survey of a demographically balanced sample of 1,014 station operators conducted in late spring of this year. The response rate from the questionnaires was 51.2%, high by normal market research standards.

The Micromarket dealer panel surveyed was the same research base that is used in Hunter's triennial Service Job Analysis studies of the service market.

Details from the "business profile" segment of the study are shown in the accompanying table.

Some significant changes in dealer "demographics" are revealed in the Micromarket survey. For example, there has been a noticeable shift from urban to rural locations among conventional stations, according to the study. In 1975, half of all stations were in cities. In 1985, only 40.6% of these types of outlets are still in cities, while 28.3% of the stations are now in rural areas, compared to only 20.3% in 1975.

Note, too, that dealers increasingly use sources other than their oil company TBA programs for their parts and accessories purchases, undoubtedly because of company pullouts from TBA or because of more limited product line offerings. Parts jobbers are scooping up the lion's share of dealers' parts business.

Reagan Orders Domestic Energy Policy Review

It could be just old-fashioned election year politicking, or maybe the White House is genuinely listening to the cries for an oil import fee.

Whatever the reason, President Reagan has ordered a "high-level review" of U.S. energy policy as it relates to national security. The study, to be completed by the end of the year, will be headed up by Department of Energy Deputy Secretary William Martin. The study will focus on:

- Assessing the energy outlook now and into the 1990s;
- Reviewing current energy policies;
- Determining the appropriate federal role in assuring that energy security goals are met;
- Making policy recommendations to the President.

Reagan announced the study at a September fund-raiser for Louisiana Republican Henson Moore. The announcement raised eyebrows because Moore, a congressman running for the Senate, has been a staunch supporter of a tax on imported oil to prop up domestic producers. On several occasions, Reagan has ruled out an oil import fee.

A DOE spokesman said members of the study group "will take as (their) mission the President's commitment to a strong domestic energy industry and his determination that America never again be captive to a foreign oil cartel."

Justice Dept. Confirms Miss. Antitrust Probe

A number of Mississippi oil marketers are being investigated for alleged price fixing.

A spokesman for the U.S. Department of Justice confirmed that an investigation is ongoing, but refused to provide details. He said evidence has been presented by Justice Department attorneys to a grand jury in Greenville, Miss.

Upstream Employment Dips 11%; Marketing Loss 'Insignificant'

Emphasizing the severity of the retrenchments of recent years, employment in the petroleum industry declined 15.4% in 1985. The work force, at 1,713,154 men and women, was the lowest since 1980.

Exploration and production took the worst beating, cutting its manpower total by 11.7%—just a little bit under 200,000 in all.

Wholesale and retail marketing chopped off about 17,000 employees in 1985, but since this total has varied considerably in recent years, the cutbacks couldn't be considered significant.

The employment totals were compiled by Independent Petroleum Assn. of America and published recently in its 1986-87 edition of "The Oil and Gas Producing Industry in Your State."

The compilation showed that California had the most retail employees (62,798) and Texas the most wholesale employees (25,550) in 1985. Texas ranked second in the number of retail employees (35,956), while Illinois had the second largest number of wholesale employees (10,091). Texas also had the greatest number of oil employees—379,631, with two-thirds of them engaged in exploration and production.

Here are some of the marketing figures for the recent years compared with total employment in the petroleum industry:

Year	Marketing Wholesale	Retail	Industrywide Total*
1985	205,632	587,352	1,713,154
1984	223,974	586,433	1,976,488
1983	225,394	558,462	1,865,305
1982	226,053	561,172	1,835,303
1981	217,248	606,196	1,762,825
1980	231,616	584,227	1,642,843

*Includes exploration, production, refining and transportation.

Here are the state-by-state totals:

State	Wholesale	Retail	Industrywide Total
Alabama	4,844	7,622	17,942
Alaska	513	1,169	11,946
Arizona	1,512	8,356	11,911
Arkansas	2,825	4,710	14,636
California	16,780	62,798	160,178
Colorado	2,929	8,601	38,672
Connecticut	2,052	9,384	12,978
Delaware	309	1,475	3,029
Dist. of Columbia	185	1,054	2,071
Florida	7,140	30,156	40,883
Georgia	5,964	16,680	27,302
Hawaii	522	3,638	4,910
Idaho	1,425	2,809	4,775
Illinois	10,091	26,269	59,871
Indiana	3,231	16,161	26,861
Iowa	3,150	11,435	16,289
Kansas	2,618	7,691	34,191
Kentucky	3,063	9,989	23,200
Louisiana	5,800	8,100	112,600
Maine	1,318	2,627	3,945
Maryland	3,059	13,085	17,337
Massachusetts	3,018	14,462	22,912
Michigan	5,380	21,250	40,780
Minnesota	2,562	15,845	21,026
Mississippi	2,789	5,389	20,223
Missouri	6,240	15,672	27,666
Montana	1,430	2,734	8,661
Nebraska	1,971	6,485	12,813
Nevada	427	3,515	5,151
New Hampshire	438	2,788	3,504
New Jersey	3,713	19,237	33,655
New Mexico	1,912	4,063	24,330
New York	9,516	28,703	56,985
North Carolina	5,445	9,667	18,002
North Dakota	2,350	2,278	11,521
Ohio	5,881	29,159	60,690
Oklahoma	5,726	6,135	89,826
Oregon	2,374	7,884	11,998
Pennsylvania	9,600	25,400	61,000
Rhode Island	483	2,514	3,895
South Carolina	3,691	7,274	11,600
South Dakota	1,451	2,736	4,506
Tennessee	4,870	11,821	19,346
Texas	25,550	35,956	379,631
Utah	1,689	4,779	13,663
Vermont	309	1,750	2,183
Virginia	7,616	14,996	25,634
Washington	2,862	9,841	16,193
West Virginia	2,359	3,812	17,825
Wisconsin	3,263	14,441	20,831
Wyoming	1,387	2,957	21,487
Total US	**205,632**	**587,352**	**1,713,154**

Unocal is No. 1 in L.A. With 17.5% of Stations

Unocal has more stations in Los Angeles County than any other company, reports Whitney Leigh Corp., a marketing research firm based in Marina del Rey, Calif.

Following are the station counts of all major brands and of nonmajor brands as a group:

1. Unocal	580	(17.5%)
2. Chevron	455	(13.7%)
3. Arco	433	(13.1%)
4. Mobil	424	(12.8%)
5. Shell	422	(12.7%)
6. Texaco	390	(11.8%)
7. Exxon	123	(3.7%)
Total major	2,827	(85.3%)
Nonmajor	486	(14.7%)

Overcharge Audit Names To Be Released by DOE

A division of the Department of Energy has been ordered to release documents that list those marketers still under audit for alleged price overcharges in 1980.

The decision to release the names of the marketers was applauded by Washington, D.C., attorney Gregg Potvin, who filed a Freedom of Information Act (FOIA) request in August to force the release of the names. Potvin said the DOE decision means a number of marketers who have been cleared of the oil price overcharges are now free to destroy outdated records.

DOE regulations forced those marketers still under audit to maintain the records. Potvin filed the FOIA request after a DOE official in the agency's Economic Regulatory Administration refused to provide him with a list of the marketers still under investigation.

Marketers interested in finding out the status of their DOE audit may call attorney William Taylor at 202/797-8822.

Average State 'Gas' Excise Doubled Over Past 25 Years

Back in 1960, when gasoline fetched about 36¢ to 37¢ gal. at most retail pumps, Hawaii held the dubious distinction of being No. 1 in the amount of taxes it collected from motorists. Today, Hawaii has been displaced and replaced by the state of Washington which, along with Oklahoma and Vermont, ranked 18th 25 years ago.

Washington currently levies 18¢ in state assessments which, together with the 9¢ gal. the federal government takes, means that motorists there are now paying 27¢ gal. in motor fuel taxes. With crude and product prices in the sorry state they were at mid-summer, it is increasingly obvious that suppliers and marketers are being backed into a hard corner in many of the high-tax states.

Minnesota, Wisconsin, Connecticut and Louisiana aren't far behind Washington. Minnesota, which ranked 42nd in 1960, is now No. 2 at 17¢ state and 9¢ federal for a total tax of 26¢ gal. The other three are in the 25¢ gal. range.

Not all states are in that high tax level, however. On the other end of the spectrum is the good state of Oklahoma, with a 6.6¢ state tax and a total tax of 15.6¢ gal. Missouri and Georgia are just above Oklahoma in the 16¢ gal. area while Wyoming, New Jersey, Florida, Alaska and New York are at 17.1¢ and under, for combined totals of 25¢ to 26¢ gal.

One thing that must be borne in mind is that excise, sales and local taxes also are authorized in a number of states, inflating the pump price of gasoline significantly.

The national averages for state gasoline taxes in 1985 and 1960, respectively, were 10.9¢ and 5.9¢ gal. Federal taxes were 9¢ in 1985 and 4¢ in 1960. Thus, these two national averages amounted to 19.9¢ in 1985 and 9.9¢ a quarter of a century ago.

Some of the increases, percentagewise at least, were fairly stiff through the years. Minnesota's state tax is up 240%, more than tripling from 5.0¢ gal. to 17¢ gal. Washington rose 177%, Wisconsin 175%, Connecticut 167%, Arizona 160%, Nevada 158% and Michigan 150%.

Percentages can be deceiving, however. Missouri, for example, recorded an increase of 133%. But Missouri's tax load rose only from 3¢ gal. to 7¢ gal. The smallest percentage increase was Oklahoma's 2%, as the state tax rose from 6.5¢ to 6.6¢ gal. Four states have held their 25-year tax hikes to 1¢ gal. Others included Alaska, Florida and Georgia. Two others, Maine and Mississippi, held tight at 2¢ while New York went to 2.1¢ and Rhode Island reached 2.7¢ gal. A dozen states limited their tax increases to the 3¢ to 4¢ gal. range. The federal tax was jumped from 4¢ gal. to 9¢ gal. on April 1, 1984.

Not all states have flat-rate tax structures, however. Some, especially during the years when gasoline prices were rising rapidly, used percentage formulas to increase their take. In recent years, as pump prices and consumption declined, so did the averaged tax collections of the states still using these formulas.

	1985		1960		% Chng.	Total Taxes +9¢	+4¢
State	Rank	Tax	Rank	Tax	'85 v. '60	Fed. '85	Fed. '60
Washington	1	18.0	18	6.5	177	27.0	10.5
Minnesota	2	17.0	42	5.0	240	26.0	9.0
Wisconsin	3	16.5	23	6.0	175	25.5	10.0
Connecticut	4	16.0	23	6.0	167	25.0	10.0
Louisiana	4	16.0	2	7.0	129	25.0	11.0
Nevada	6	15.5	23	6.0	158	24.5	10.0
Michigan	7	15.0	23	6.0	150	24.0	10.0
Nebraska	8	14.9	2	7.0	113	23.9	11.0
Idaho	9	14.5	23	6.0	142	23.5	10.0
Hawaii	9	14.5	1	8.5	71	23.5	12.5
New Hampshire	11	14.0	2	7.0	100	23.0	11.0
Maryland	12	13.5	23	6.0	125	22.5	10.0
Alabama	13	13.0	2	7.0	86	22.0	11.0
Arizona	13	13.0	42	5.0	160	22.0	9.0
Dist. of Col.	13	13.0	23	6.0	117	22.0	10.0
Iowa	13	13.0	23	6.0	117	22.0	10.0
North Dakota	13	13.0	23	6.0	117	22.0	10.0
South Carolina	13	13.0	2	7.0	86	22.0	11.0
South Dakota	13	13.0	23	6.0	117	22.0	10.0
Vermont	13	13.0	18	6.5	100	22.0	10.5
North Carolina	21	12.2	2	7.0	74	21.2	11.0
Colorado	22	12.0	23	6.0	100	21.0	10.0
Ohio	22	12.0	2	7.0	71	21.0	11.0
Pennsylvania	22	12.0	42	5.0	140	21.0	9.0
Virginia	25	11.4	2	7.0	63	20.4	11.0
Delaware	26	11.0	42	5.0	120	20.0	9.0
Kansas	26	11.0	42	5.0	120	20.0	9.0
New Mexico	26	11.0	23	6.0	83	20.0	10.0
Utah	26	11.0	23	6.0	83	20.0	10.0
Indiana	30	10.5	23	6.0	75	19.5	10.0
West Virginia	30	10.5	2	7.0	50	19.5	11.0
Kentucky	32	10.0	2	7.0	43	19.0	11.0
Tennessee	32	10.0	2	7.0	43	19.0	11.0
Texas	32	10.0	42	5.0	100	19.0	9.0
Rhode Island	35	9.7	2	7.0	39	18.7	11.0
Arkansas	36	9.5	18	6.5	46	18.5	10.5
Massachusetts	37	9.2	41	5.5	67	18.2	9.5
California	38	9.0	23	6.0	50	18.0	10.0
Maine	38	9.0	2	7.0	29	18.0	11.0
Mississippi	38	9.0	2	7.0	29	18.0	11.0
Montana	38	9.0	23	6.0	50	18.0	10.0
Oregon	38	9.0	23	6.0	50	18.0	10.0
Illinois	43	8.9	42	5.0	78	17.9	9.0
New York	44	8.1	23	6.0	35	17.1	10.0
Alaska	45	8.0	2	7.0	14	17.0	11.0
Florida	45	8.0	2	7.0	14	17.0	11.0
New Jersey	45	8.0	42	5.0	60	17.0	9.0
Wyoming	45	8.0	42	5.0	60	17.0	9.0
Georgia	49	7.5	18	6.5	15	16.5	10.5
Missouri	50	7.0	51	3.0	133	16.0	7.0
Oklahoma	51	6.6	18	6.5	2	15.6	10.5
U.S. Avg.	—	10.9	—	5.9	—	19.9	9.9

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*These taxes are essentially those levied on gasoline used as a motor fuel; some states have authorized additional local and county gasoline taxes for special purposes; states with sales, gross receipts and other special taxes usually levy these on gasoline too; thus the totals in the sixth column (1985) above could be several cents higher at the retail level than those listed here.

Source: Energy Information Administration, Monthly Energy Review (March), published 6/27/86; data recast and extended by *NPN*.

12/2/86 C4680-1

December 1986

$5.00

Why Ex-Arco Chief Sees $25-$30 Oil Coming
How One Indie Survives in a Metro Market
Forecast: Fast Lube Units to Double by '90

NPN

National Petroleum News

FUEL OIL OUTLOOK: UPBEAT

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The picture could quickly change—a severe winter, import fees, a Mideast upheaval. As the season begins, though, things look good for fuel oil marketers—demand is up. Prices are steady. Margins are good.

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There's something different going on in the fuel oil business this winter and it's not just lower prices. Our cover report looks at how things are shaping up as another winter rolls around. **Page 36**

When an oilman as knowledgeable as former Arco Chairman Robert Anderson says the industry is on the brink of dramatic change, it may be time to begin putting up the storm shutters. Here's a report on this dynamic leader. **Page 23**

FASTOP
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When you've been fighting major competition for two generations, your family learns to roll with the punches. Here's a look at how jobber Bob Phillips thrives under such conditions. **Page 48**

• TRENDS

Top Assn. Pros Phasing Themselves Out

By this time next year, a treasure trove of knowledge and skills, horse sense and unique talents—about a century and a half's worth to be specific—will have been lost to the petroleum industry.

In one way, the loss isn't all that cold black and white; in another, it's pretty well tantamount to that.

The people involved will continue to be available as "consultants" for another year or so, but since it's only natural for new regimes to want to run things their own way, most "gray beards," while ornamental and helpful, also are often considered excess baggage.

What's causing this brain drain is the near- simultaneous retirements of the top professionals in the national trade association field—the key staff men who have probably done more to keep innumerable projects and legislative battles in hand than non-association people realize. For example, it takes time, patience, hard work, thick skins and, more often than not, just old-fashioned prayers to keep progress on the horizon.

Two of the elite have already gone; another goes in January; another next June; and still another next September. Cumulatively, their backgrounds embrace about 150 years of trade association experience. These are the key people who are or will be disappearing in this brief 15- to 16-month period:

- Charles Burkhardt, who stepped down from the presidency of New England Fuel Institute last April at the age of 71. He had been the leader of that organization from its inception in the late 1950s. Some people derided his iron will and his passion for control, but the NEFI that stands today is a testimonial to his leadership.
- Howard Upton, who likewise has been the chief staff executive at Petroleum Equipment Institute since the early days. He is stepping down as of next June 1. His weekly newsletter is recognized as one of the finest of its kind both within the petroleum and equipment fields, and among trade associations generally because of his incisive knowledge and his ability to put it all together in a coherent fashion. PEI, strong and vibrant, is his monument, too.
- Lloyd Unsell, the old pro at Independent Petroleum Assn. of America, is retiring in January. Unsell is president of IPAA, an extremely articulate defender of small independent producers and a very clever infighter in the Washington arena. He started out as a public relations man back in the late '40s when percentage depletion and intangible drilling costs—foreign subjects to most marketers, but vital ones where the industry as a whole was concerned—were critical issues for oil men everywhere.
- Steve Potter, another ex-public relations man who climbed the ladder to the executive vice presidency of American Petroleum Institute, is bowing out next September when he reaches the normal retirement age of 65. Potter's history dates back to the old American Petroleum Industries Committee which used to fight gasoline tax proposals anywhere and everywhere at the drop of a hat, and includes time and service with the Committee on Public Affairs—successor to the old Oil Industry Information Committee—before achieving his present role as No. 2 man in the API hierarchy.

Still another stepper-downer who has played key roles in national marketer affairs was Bill Hall, of the Independent Oil Men's Assn. of New England [*NPN*—Nov. '86, p85]. Hall had a major role in the original study and the reshaping of the old National Oil Jobbers Council, including its transference from a New England locale to Washington, where it renamed itself several years ago as the Petroleum Marketers Assn. of America. It now packs a mighty wallop as the marketers' voice on things legislative and promotional, such as oil heat.

Among the vets who have been doing especially notable jobs for 20 to 30 years are Empire State Petroleum Assn.'s Bob Lynch (also a key figure in the old National Oil Fuel Institute); Ohio Petroleum Marketers Assn.'s Roger Dreyer; Illinois Petroleum Marketer Assn.'s William Deutsch; Missouri Oil Jobbers Assn.'s John Hahn; North Carolina Oil Jobbers Assn.'s Don Ward; Independent Petroleum Assn. of Connecticut's Charley Isenberg; Midwest Petroleum Marketers Assn.'s Don Woodrick; California Independent Oil Marketers Assn.'s Jim Devine; and Self-service & Multiple Pump Assn.'s Paul Erdos. There are others, many others, but these are only a few. *—J. Richard Shaner*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

SEPTEMBER	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$ .864	$ .797	$ .860	$1.010
Regions:				
Northeast	.863	.787	.839	. 99
North Central	.862	.812	.865	1 .014
South	.841	.768	.834	.995
West	.895	.820	.896	1.055

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	10/31/86	11/1/85
Gasoline (total)	220,996	216,000
Gasoline (Unleaded)*	120,798	108,099
Jet Kerosine	43,302	36,509
Distillates	150,991	124,913
Residual	47,969	49,036

**Included in gasoline total.*
Source: American Petroleum Institute.

Downstream Earnings Bolster Oil's Corporate Nets—Again

Though the third-quarter and nine-month earnings reports of the top 20 oil companies seem bedraggled on the surface, they're pretty as a picture when the downstream segments are isolated from the rest.

The downstream sectors are the areas where making money wasn't necessarily a golden objective of the big oil companies in the past. They were concerned more about just getting rid of the stuff. The current third-quarter and nine-month returns, viewed in this light, make happy hour conversation topics, just as those of the second quarter and the first half did several months ago [*NPN*—Sept. '86, p30].

Corporate third-quarter earnings were generally hit in varying degrees by the depressed crude oil and natural gas prices, and by write-offs and the administrative assignment of losses to reflect asset sales and depreciated properties. At that, however, Exxon pushed its nine-month earnings close to the $4 billion mark and second-place Mobil, even with a weak third quarter, managed to get above $1.2 billion for the same nine-month period. Sun had a spectacular 179% increase for its nine-month earnings, but that was mostly because last year's total was depressed by a $160 million loss in the third quarter.

Ashland has already completed its fiscal year and it showed a net of $209 million for the 12-month period ending Sept. 30. This was a 42% improvement over the preceding year.

Only Phillips and Amerada Hess, in addition to Exxon, had plus signs in the corporate returns for the third quarter.

It was in downstream operations, however, that the financial reports had their special marketing beacon-light effects.

Upwards of a half dozen companies reported they had higher marketing profits than their corporate nets. Mobil, for example, earned $182 million in the third quarter for the company as a whole, while downstream earnings were reported at $321 million. Similarly, Texaco said its nine-month earnings were $675 million, and its downstream operations produced $835 million. There were others like that, too, including Amoco, Standard Oil and Phillips.

Exxon, Mobil and Chevron made significantly more in their overseas marketing operations than they did domestically. Nevertheless, let it not be said that they fared poorly in the U.S. Exxon's domestic downstream earnings were up 63% in the third quarter and 219% in the nine-month period. In the same vein, Mobil was up 63% in the third quarter and 231% in the nine-month frame. Chevron was up 155% for the quarter and 76% for nine months.

Exxon and Mobil both made more than $1 billion in downstream operations alone in the first nine months of this year. Not all companies treat downstream operations alike, however. Some restrict downstream to refining and marketing, while others throw in transportation and chemicals.

All things considered, the downstream reports were excellent for both the third-quarter and the nine-month returns for just about everybody.

Third-quarter and Nine-month Earnings Reports

(in millions of dollars)

Company	3rd Qtr. 1986	3rd Qtr. 1985	% Chng.	9 Mos. 1986	9 Mos. 1985	% Chng.
Exxon	$1,055.0	$995.0	6.0%	$3,880.0	$3,065.0	26.6%
Mobil	182.0	(116.0)	—	1,204.0	615.0	95.8
Chevron	208.0	245.0	(15.1)	801.0	946.0	(15.3)
Texaco	162.0	301.0	(46.2)	675.0	926.0	(27.1)
Shell	133.0	365.0	(63.6)	628.0	998.0	(37.1)
Amoco	13.0	490.0	(97.3)	582.0	1,563.0	(62.8)
Tenneco	(246.0)	(142.0)	—	(42.0)	(44.0)	—
Arco	102.0	403.0	(74.7)	551.0	344.0	60.2
Standard Oil	52.0	346.0	(85.0)	(376.0)	1,079.0	—
Phillips	113.0	93.0	21.5	217.0	323.0	(32.8)
Sun	69.0	(160.0)	—	315.0	113.0	179.0
Unocal	21.8	158.7	(86.3)	126.6	459.8	(72.5)
Amer. Hess	41.8	36.4	14.8	(277.8)	105.4	—
Dia. Shamrock	(97.9)	52.8	—	(73.4)	(652.5)	—
Ashland*	34.3	46.4	(26.1)	208.6	146.7	42.2
Kerr-McGee	(325.8)	39.8	—	(300.5)	108.8	—
Pennzoil	(10.1)	44.4	—	(1.1)	154.3	—
Murphy	(0.5)	18.6	—	13.0	62.6	(79.2)
Amer. Petrofina	5.7	10.8	(47.2)	(29.6)	29.2	—

*Fourth quarter and full year; fiscal ends 9/30.

Downstream: The Nets Are Brighter—Much Brighter

(in millions of dollars)

Company	3rd Qtr. 1986	3rd Qtr. 1985	% Chng.	9 Mos. 1986	9 Mos. 1985	% Chng.
Exxon (total)	$460	$249	85%	$1,640	$384	327%
domestic	106	65	63	463	145	219%
foreign	354	184	92	1,177	239	392
Mobil (total)	321	109	85	1,040	384	453
domestic	80	49	63	301	91	231
foreign	241	60	302	739	97	662
Chevron (total)	207	60	245	643	315	204
domestic	130	51	155	337	192	76
foreign	77	9	756	306	123	149
Texaco						
worldwide	212	71	199	835	111	652
Shell						
domestic	78	35	123	284	102	178
Amoco						
worldwide	133	102	30	325	203	60
Arco	94	93	1	305	235	30
Standard Oil	174	91	91	328	294	12
Phillips (total)	126	114	11	394	236	67
domestic	128	111	15	381	217	76
foreign	(2)	3	—	13	19	(32)
Sun	29	30	(3)	208	104	96
Amer. Hess	51.4	(14.8)	—			
Ashland**	70	84	(16)	326	213	220
Kerr-McGee	1	13	—	6	15	(59)

*Operating profits, pretax; **Fourth quarter and full year; fiscal ends 9/30.

Supply, Price and Margin Outlook Has Fuel Oil Marketers in Upbeat Mood

There's a discernible upbeat tick in the fuel oil industry this winter—something that hasn't been evident in recent years. It is there even though wholesale and retail prices are depressed to what might be called abnormally low levels.

It is there because supplies are adequate and no one is worried about run outs or shortages.

It is there because margins are generally "comfortable," perhaps even exciting in some marketplaces. Independents usually shy away from talking about margins, but it's known that they are ranging from 25¢ to 35¢ gal., which isn't bad money when retail prices are running around 75¢ to 80¢ gal. in the East.

The low retails not only are enhancing the competitive position of distillates vis a vis natural gas, but also they have distinct consumer appeal. Federal forecasts indicate that if prices follow the 1986-87 projections, home owners' winter heating bills will be significantly lower—maybe 10% to 15% by the end of the heating season.

The good supply, price and margin outlook is spurring interest in the home heating oil business. Acquisitions and expansion programs are stirring up the industry and changing its face, especially on the Atlantic Seaboard, where its biggest markets are located.

One result is that reinvestment in the industry is said to be heavier this winter than the pattern of recent years.

Equipment sales are better, too, industry sources say.

New Interest in Programs

Another reflection of the subtle optimism is the embrace the wholesalers and retailers are giving local oil heat promotion programs, spurred mostly by the successes and materials of the Greater New York Area's Metropolitan Energy Council.

MEC, as it is generally known, has been making its advertising and promotion materials available to all comers literally on a cost basis.

In August, as a more specific example, was the exceptionally well attended National Oil Heat Promotion and Marketing Conference, sponsored by Petroleum Marketers Assn. of American, in Boston, Mass.

There was no question among the 300-plus attendees, who got there despite some of the nastiest flying weather of the year, that oil heat was getting its footing again [*NPN*—Sept. '86, p14].

Again, there were attendees and participants from the East Coast, the Midwest, the Pacific Northwest and Canada, all bubbling with bright ideas and hopes for a healthier, more competitive fuel oil industry.

Even more exciting—and intriguing—was the cooperative venture in the production of two new films for builder, realtor and consumer audiences, and the ongoing plans to produce several more if sufficient financial support can be obtained from the industry.

Especially significant was the fact that the film programs were pushed, promoted and prepared by two manufacturers—Bert Watling, of The Carlin Co., Windsor, Conn., and John Beckett, of the R.W. Beckett Co., Elyria, Ohio, who represented the National Oil Progress and Energy Committee.

Ironically, this committee was an offshoot of the Centennial Committee of the year before. It jettisoned its original instructions to build a museum for the artifacts of oil heat in favor of a headier concept that would look to the future, not dwell on the past.

The Big Get Bigger

Petroleum Heat & Power, of Stamford, Conn., the biggest independent retailer of No. 2 home heating oil in the land, acquired 14 companies in the one-year period of Oct. 15, 1985 through mid-October 1986.

The additions brought with them 54 million gal. of business, raising Petro's grand total to 300,776,000 gal. of No. 2.

Said bustling President Irik Sevin: "The acquisitions put us in four new markets (Staten Island, N.Y., Allentown, Pa., Ridgefield, Conn., and Trenton, N.J.) and gave us 52,000 new accounts.

"We're now in 16 markets in eight states and we have 23 branches. And there's a reasonable likelihood that we'll see more additions and marketplaces before the year is out."

The next two biggest independents, Meenan Oil Co., of Syosset, N.Y., and Whale Oil Co., of Brooklyn, N.Y., have ongoing expansion programs, too, but their numbers were not available.

Among other absorbing developments were the entrance of Cargill, Inc., the big internationally renowned grain trader, into the wholesale fuel oil markets via the purchase of the old North East Petroleum, which was spun off by Charter Oil, of

By J. Richard Shaner
Executive Editor

Distillate Stocks Firm As Heating Season Opens

Generally speaking, inventories of distillate heating oils were in relatively good shape as the 1986-87 heating season got underway.

At 151 million bbl. and with a warmer-than-normal weather forecast for the balance of 1986, there seemed to be little reason to be concerned about the adequacy of stocks on either the primary or secondary levels. Primary stocks on Oct. 1 were 28% above those for the comparable date of last year. Drawdowns in September were low, indicating many distributors had already had themselves in ready-to-go positions.

This is the stock picture on a regional basis in comparison to last year and the preceding year:

Primary Distillate Stocks

	10/1/86 (millions of bbl.)	10/1/85	10/1/84
Total U.S.	150.8	117.4	142.9
East Coast	68.4	47.1	57.5
Midwest	32.0	32.0	38.6
Gulf Coast	36.3	24.6	32.3
Rocky Mounts.	2.8	2.6	3.3
West Coast	11.3	10.4	11.2

Jacksonville, Fla., and the overnight emergence of Champion Oil, of Greenwich, Conn., a smallish wholesaler, into a full-blown retailer with the acquisition of four subsidiaries sold off by Chevron in its departure from the Northeast [*NPN*—Sept. '86, p44].

Another new entrant to be watched this winter and next is John Kaneb, who bowed out two years ago in the sale of his family firm to Charter, but is now wholesaling and terminalling again with a new firm called Catamount Petroleum.

There are reports that Kaneb is eyeballing the retail end of the business and is rapidly expanding his basic staff for a whole new career in distillates and resids.

Still another significant event is the about-face being taken by Ultramar Petroleum Corp., the American subsidiary of the Ultramar Group in London. It came on with a rush three years ago in buying Pittson Corp., then adding The Augsbury Corp., an upstate New York marketer, and announcing plans for major goals in the Northeast to get full utilization of its sister company's 100,000 b/d refinery in Montreal.

It recently sold some Connecticut and Massachusetts terminals and accounts to a Connecticut/Rhode Island jobber (See East Coast column, Page 18) and, at last reports was supposed to be talking about closing down its marketing headquarters in Montvale, N.J.

Atlantic Petroleum Co., which entrepreneur John Deuss started up a year ago when he bought up most of Arco's collection of gasoline stations in Pennsylvania and New York, also is in distillates now via the purchase from Ultramar of some of its stations and fuel oil operations in the Mid-Atlantic area to the Canadian border.

Deuss has been quoted as saying he is shooting for a business of 500,000 b/d by 1990. That can only mean he's action-minded and on the prowl.

Other pistol-packers in East Coast adventures are Belcher Oil and Getty Petroleum. Both are avidly looking for acquisitions, whether they be gasoline, fuel oil or both.

In mid-October, both Belcher and Getty were looking at J.R. Sousa and Sons, Revere, Mass., a big gasoline independent, and Getty simultaneously was still chasing after Charter Oil and its 400 service stations on the seaboard.

Supply Forecasts

Otherwise, the distillate and residual fuel oil segments seem to be in for a rather prosaic winter. There could be an increase in prices after the first of the year—not much, but nevertheless a boost of sorts.

Like all forecasts, these observations can go right out the window, however, if the weather takes a very bad turn for the worse or if war or political problems should disrupt the flow of crude oil from the Middle East.

The OPEC cartel is struggling desperately to regain the upper hand by curtailing production and putting supply more in line with demand. The track record of the member countries isn't all that good, though, so this is a factor that has about as much reliability as a weather forecast—long-term or short-term.

Feds Forecast Upturn

The federal government's most recent forecast projected distillate demand to average 2.7 million b/d in the third quarter, rise to 3.1 million b/d in the fourth quarter, then peak at 3.3 million b/d in the first quarter of the new year before winding down to an average of 2.9 million b/d in the April-June finale.

For the calendar year of 1986, the fed-

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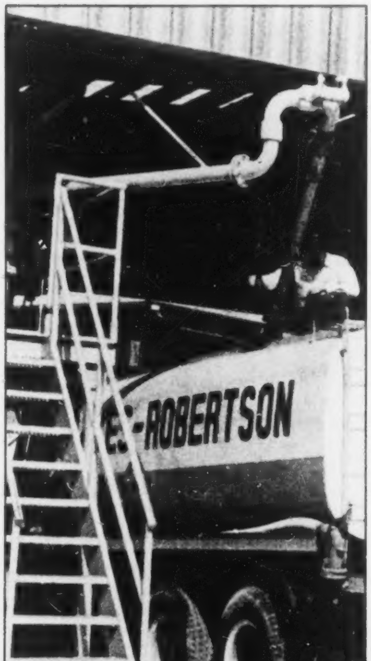
HEATING OIL

The outlook is good, but marketers have fingers crossed as trucks start rolling.

eral forecast suggests the average will be 2.9 million b/d, which would be an increase of 2.1% over the preceding year. For 1987 as a whole, the government expects consumption to average 3 million b/d, which would be up 3.4% over the current year. The most notable part of these increases, however, is that they are not home heating items—they reflect the spiraling demand of the transportation sector—the big trucks and other users of the diesel cuts.

Wholesale prices for No. 2 are expected to average out, ex taxes, to 41¢ and 44¢ gal., respectively, in the third and fourth quarters of this year to 49¢ gal. in the first half of 1987. Retails were projected at 65¢ to 68¢ gal. in the first leg of the winter season to 77¢ to 75¢ in the first and second quarters of 1987.

If these forecasts pan out, they would mean decreases of 39% in the wholesale cost of No. 2, and 28% in the consumer price. Things may get a little better as the year goes on and the 1987 price average may be a bit higher than 1986. But that remains to be seen.



Refinery capacity is said to be adequate, even if "long-shot" cold snap hits.

Petroleum Marketers Assn. of America generally agreed with the concept that this would be a dull winter for fuel oil marketers, but qualified everything with a variety of "ifs" and warned "there could be a limited price spike" in the months ahead.

PMAA phrased it this way: "On the supply side, this winter will hand-to-mouth on the part of refiners and suppliers, and primary inventories should be low. If there is an unexpected upturn in demand, the supply could be tight both for refiners and from competition for imports."

The best thing to do, said PMAA, is "watch your inventories and those of your supplier."

'No Problem,' Says API

American Petroleum Institute, in a mid-October commentary, said its analysis indicates few, if any, problems ahead for supply and demand.

Even if a long-shot cold January comes along, API said, existing refinery capacity could take care of things. The Institute said that last winter, existing capacity provided for 92% of the demand while inventories accounted for 3% and imports 5%.

At the present time, API said, the industry has a nominal supply capability of 3.5 million b/d of No. 2. This is approximately 300,000 b/d more than the government forecasts. A very cold January would add a surge of 250,000 b/d to demand. By stepping up utilization rates for short periods and by drawing down on stocks, plus a small bit of help from imports, the industry could quickly make available as much as 4.2 million b/d if necessary. This would be more than 700,000 b/d in extra supplies to meet consumer requirements.

Although API doesn't say so, there could be some hit and miss supply problems in a cold January, however. Bitter weather could have a substantial impact on transportation and distribution problems, meaning that some jobbers and consumers might hit into run-out situations—either because their supplier was short or they themselves were inaccessible for deliveries.

Nagging Questions Remain

The big question, as always, is what will happen to the international and domestic crude oil prices. The OPEC suppliers and domestic producers, as well, are trying to get the crude prices up closer to the $18 to $20 bbl. level.

This would improve the cash flows of

1985 Distillate Boxscore: 12 States Up, 38 Down

Although as many as 12 states increased their consumption in 1985, distillate fuel oil sales slumped 5.7% last year, according to the federal government's latest report on distillate sales in the U.S.

In its state-by-state breakout by categories of use, the new report said distillate sales aggregated 43.1 billion gal. in 1985, compared with 45.7 billion gal. the year earlier. That's a volume decline of 2.6 billion gal.

The percentage increases ranged from as little as 0.5% for Missouri to a spectacular 58% for Hawaii. The latter figure is essentially deceiving, however, inasmuch as the liquid volume differential is only 69 million gal.

States on the plus side in 1985, in addition to Missouri and Hawaii, were Alaska, Florida, Maine, Mississippi, Montana, New Hampshire, New Mexico, Vermont, Washington and Wyoming. The big losers, percentagewise, were Illinois, down 19%, and Rhode Island, minus 15.1%.

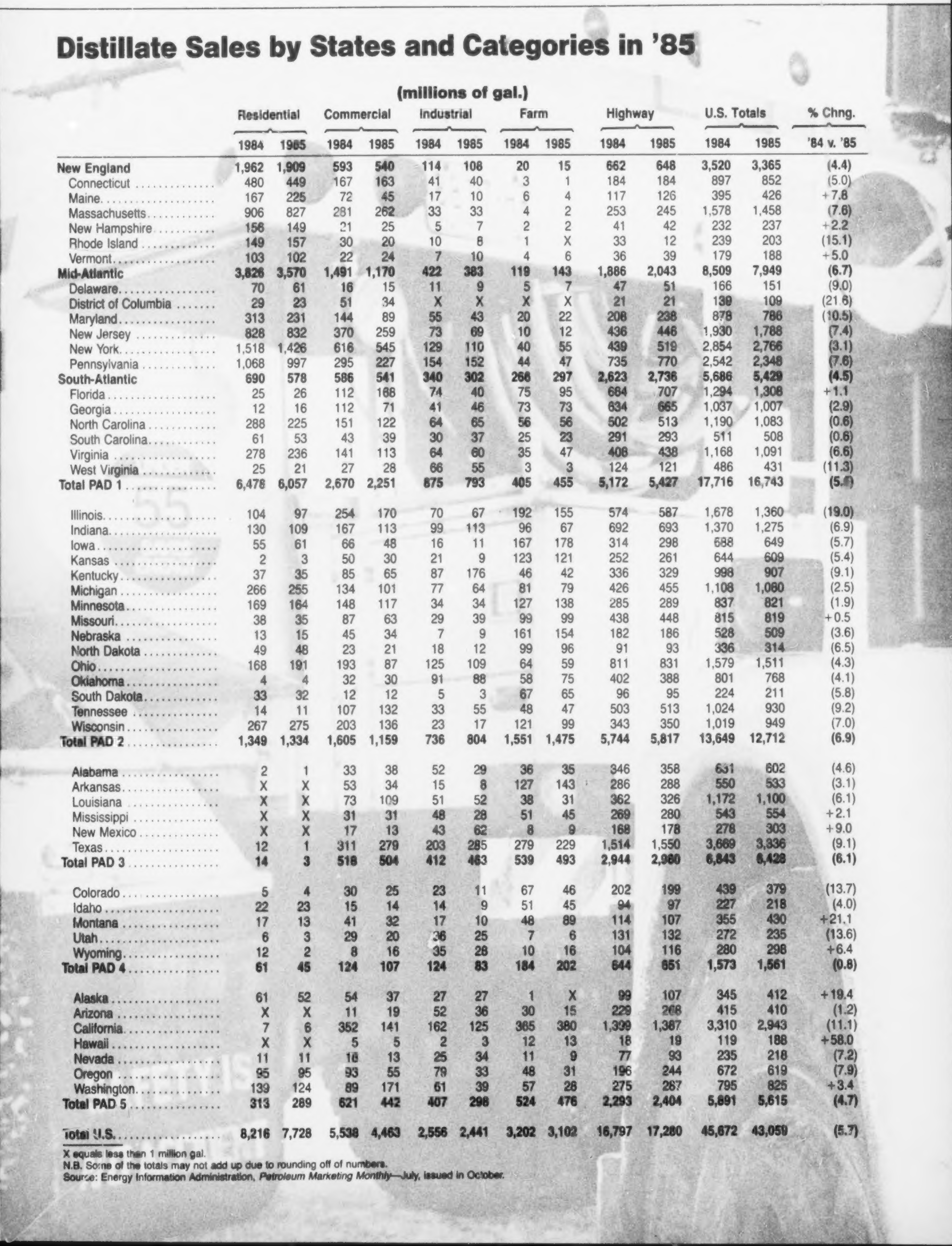
A discouraging part of the picture, for the fuel oil industry at least, is that 9% of the sales declines took place along the Atlantic Seaboard where two-thirds of the distillates are consumed.

Sales of distillates used primarily for space and water heating slipped 1.1% in 1985, the report said, while sales of distillates for highway use—the conventional diesel cut—rose 2.9% at the same time. This is a trend of recent years that is now becoming more pronounced. Space and water heating distillate sales amounted to 12.2 billion gal. in 1985, while those of the diesel variety exceeded 17.3 billion gal. In other words, space and water heating fuels took only about 32% of the distillate sales, while diesels accounted for 40%.

Omitted from the table opposite are the sales totals for oil company use, electric utilities, railroads and vessel bunkering, military, off-highway and miscellaneous others. These sales are included, however, in the U.S. totals in the last column.

For reference, the government defined residential use as primarily private households; commercial use as apartment buildings, motels, laundries and nonmanufacturing facilities; industrial as mines, smelters and manufacturing/processing; farms as agricultural machinery, crop drying, smudge pots and some space and water heating; and highway consumption as mostly motor fuel.

Distillate Sales by States and Categories in '85



(millions of gal.)

	Residential		Commercial		Industrial		Farm		Highway		U.S. Totals		% Chng.
	1984	1985	1984	1985	1984	1985	1984	1985	1984	1985	1984	1985	'84 v. '85
New England	1,962	1,909	593	540	114	108	20	15	662	648	3,520	3,365	(4.4)
Connecticut	480	449	167	163	41	40	3	1	184	184	897	852	(5.0)
Maine	167	225	72	45	17	10	6	4	117	126	395	426	+7.8
Massachusetts	906	827	281	262	33	33	4	2	253	245	1,578	1,458	(7.6)
New Hampshire	156	149	21	25	5	7	2	2	41	42	232	237	+2.2
Rhode Island	149	157	30	20	10	8	1	X	33	12	239	203	(15.1)
Vermont	103	102	22	24	7	10	4	6	36	39	179	188	+5.0
Mid-Atlantic	3,826	3,570	1,491	1,170	422	383	119	143	1,886	2,043	8,509	7,949	(6.7)
Delaware	70	61	16	15	11	9	5	7	47	51	166	151	(9.0)
District of Columbia	29	23	51	34	X	X	X	X	21	21	139	109	(21.6)
Maryland	313	231	144	89	55	43	20	22	208	238	878	786	(10.5)
New Jersey	828	832	370	259	73	69	10	12	436	446	1,930	1,788	(7.4)
New York	1,518	1,426	616	545	129	110	40	55	439	519	2,854	2,766	(3.1)
Pennsylvania	1,068	997	295	227	154	152	44	47	735	770	2,542	2,348	(7.6)
South-Atlantic	690	578	586	541	340	302	266	297	2,623	2,736	5,686	5,429	(4.5)
Florida	25	26	112	168	74	40	75	95	684	707	1,294	1,308	+1.1
Georgia	12	16	112	71	41	46	73	73	634	665	1,037	1,007	(2.9)
North Carolina	288	225	151	122	64	65	56	56	502	513	1,190	1,083	(0.6)
South Carolina	61	53	43	39	30	37	25	23	291	293	511	508	(0.6)
Virginia	278	236	141	113	64	60	35	47	408	438	1,168	1,091	(6.6)
West Virginia	25	21	27	28	66	55	3	3	124	121	486	431	(11.3)
Total PAD 1	6,478	6,057	2,670	2,251	875	793	405	455	5,172	5,427	17,716	16,743	(5.5)
Illinois	104	97	254	170	70	67	192	155	574	587	1,678	1,360	(19.0)
Indiana	130	109	167	113	99	113	96	67	692	693	1,370	1,275	(6.9)
Iowa	55	61	66	48	16	11	167	178	314	298	688	649	(5.7)
Kansas	2	3	50	30	21	9	123	121	252	261	644	609	(5.4)
Kentucky	37	35	85	65	87	176	46	42	336	329	998	907	(9.1)
Michigan	266	255	134	101	77	64	81	79	426	455	1,108	1,080	(2.5)
Minnesota	169	164	148	117	34	34	127	138	285	289	837	821	(1.9)
Missouri	38	35	87	63	29	39	99	99	438	448	815	819	+0.5
Nebraska	13	15	45	34	7	9	161	154	182	186	528	509	(3.6)
North Dakota	49	48	23	21	18	12	99	96	91	93	336	314	(6.5)
Ohio	168	191	193	87	125	109	64	59	811	831	1,579	1,511	(4.3)
Oklahoma	4	4	32	30	91	88	58	75	402	388	801	768	(4.1)
South Dakota	33	32	12	12	5	3	67	65	96	95	224	211	(5.8)
Tennessee	14	11	107	132	33	55	48	47	503	513	1,024	930	(9.2)
Wisconsin	267	275	203	136	23	17	121	99	343	350	1,019	949	(7.0)
Total PAD 2	1,349	1,334	1,605	1,159	736	804	1,551	1,475	5,744	5,817	13,649	12,712	(6.9)
Alabama	2	1	33	38	52	29	36	35	346	358	631	602	(4.6)
Arkansas	X	X	53	34	15	8	127	143	286	288	550	533	(3.1)
Louisiana	X	X	73	109	51	52	38	31	362	326	1,172	1,100	(6.1)
Mississippi	X	X	31	31	48	28	51	45	269	280	543	554	+2.1
New Mexico	X	X	17	13	43	62	8	9	168	178	278	303	+9.0
Texas	12	1	311	279	203	285	279	229	1,514	1,550	3,669	3,336	(9.1)
Total PAD 3	14	3	518	504	412	463	539	493	2,944	2,960	6,843	6,428	(6.1)
Colorado	5	4	30	25	23	11	67	46	202	199	439	379	(13.7)
Idaho	22	23	15	14	14	9	51	45	94	97	227	218	(4.0)
Montana	17	13	41	32	17	10	48	89	114	107	355	430	+21.1
Utah	6	3	29	20	36	25	7	6	131	132	272	235	(13.6)
Wyoming	12	2	8	16	35	28	10	16	104	116	280	298	+6.4
Total PAD 4	61	45	124	107	124	83	184	202	644	651	1,573	1,561	(0.8)
Alaska	61	52	54	37	27	27	1	X	99	107	345	412	+19.4
Arizona	X	X	11	19	52	36	30	15	229	268	415	410	(1.2)
California	7	6	352	141	162	125	365	380	1,399	1,387	3,310	2,943	(11.1)
Hawaii	X	X	5	5	2	3	12	13	18	19	119	188	+58.0
Nevada	11	11	16	13	25	34	11	9	77	93	235	218	(7.2)
Oregon	95	95	93	55	79	33	48	31	196	244	672	619	(7.9)
Washington	139	124	89	171	61	39	57	28	275	267	795	825	+3.4
Total PAD 5	313	289	621	442	407	298	524	476	2,293	2,404	5,891	5,615	(4.7)
Total U.S.	8,216	7,728	5,538	4,463	2,556	2,441	3,202	3,102	16,797	17,280	45,672	43,059	(5.7)

X equals less than 1 million gal.

N.B. Some of the totals may not add up due to rounding off of numbers.

Source: Energy Information Administration, *Petroleum Marketing Monthly*—July, issued in October.

'Watch your inventories and those of your supplier.'

the refiners and the marketers of all petroleum products, not just distillates. Higher crude and product prices could be lifesavers for some marketers caught betwixt high payouts versus lower cash flows.

Primary stocks of distillates were in good shape as the heating oil season got underway. In early October, they topped 150 million bbl., which was 27 million bbl. more than they had available at the same time last year, and about the same level that existed in late October 1984.

Secondary and tertiary inventories also were believed to be in better than average shape. Many distributors took advantage of some of the low summer prices to lay in their stocks earlier than they had been doing. Some even made very late season or early summer fills of consumer tanks to close out their old inventories and set themselves up for new additions at better prices.

In mid-October, the federal government released its annual report on Fuel Oil and Kerosine Sales (see table on this page).

This report said that in 1986, sales of distillate, kerosine and residual exceeded 60.9 billion gal., down 7.5% from 1984. In keeping with the conventional pattern, distillates accounted for 70.7% of the total sales, residual 26.4% and kerosine 2.9%.

In 1985, transportation use (on-highway diesel, vessel bunkering and railroads) accounted for more than half of the distillate demand for the first time. The transportation sector was credited with 50.5%. This was an increase of 3.4% over 1984. On-highway diesel fuel sales amounted to 17.3 billion gal. in 1985, the government said. **NPN**

1993
XWW·92A

Reinvestment and equipment purchases are up, industry sources say, reflecting short-term and perhaps some long-term optimism.

Sales of Distillates, Resid and Kerosine in 1985

(millions of gal.)

	Distillates		Residual		Kerosine	
	1984	1985	1984	1985	1984	1985
U.S. Total	45,672	43,059	18,348	16,070	1,772	1,746
Residential	8,216	7,728	—	—	652	663
Commercial	5,538	4,463	1,539	1,366	691	367
Industrial	2,556	2,441	3,499	3,345	221	254
Oil Company	848	684	1,250	945	—	—
Farm	3,202	3,102	—	—	44	53
Electric Utility	649	523	6,980	5,506	—	—
Railroad	2,945	2,786	1	6	—	—
Vessel Bunkering	1,764	1,699	4,581	4,590	—	—
On-highway Diesel	16,797	17,280	—	—	—	—
Military	701	622	96	116	—	—
Off-highway Diesel	1,756	1,522	—	—	—	—
All Other	701	169	402	194	163	206

Source: *Petroleum Marketing Monthly*, DOE, dated July, issued Oct.

Quick Lubes Gaining Ground Fast; Could Have 15% of Market by 1990

By Mark Emond
Contributing Correspondent

The current slowdown in the do-it-yourself motor oil market might be considered good news for service stations, but it isn't because quick lube facilities are getting almost all of the switchover business.

There are an estimated 1,500 quick lube outlets in the United States, controlling 14% of the installed motor oil market and 4% of the total market. In 1990, there are expected to be 4,000-6,000 quick lube locations, controlling 40% of the installed market and 12%-15% of the total market.

In terms of volume, this represents a growth from 22-25 million gal. in 1986 to 75-90 million gal. by 1990.

This rapid growth is the reason why motor oil suppliers are competing so aggressively for quick lube business, says John F. (Jack) Boehm, president of Valvoline Oil Co. The name of the game is "market share."

minit-lube
•LUBE
•OIL
•FILTER
NO APPOINTMENT NECESSARY

The competition for market share among quick lubes is "vicious," says Valvoline's Jack Boehm. Some 4,000 quick lube locations are expected nationwide by 1990.

'King Volume' in Command

Speaking to the Pacific Oil Conference management institute in late September in Reno, Boehm said:

"The king of the motor oil industry is not the big Q (Quaker State). Nor is it the asked-for-motor oil (Pennzoil) or special oils for special cars (Valvoline). It's not the trooper-tested oil (Texaco's Havoline), nor is it the oil engineered for small cars (Castrol). It's market share.

"All motor oil marketers, big or small, worship that king like never before. That's what a slow-growth market will do. And the competition is vicious."

Although the U.S. market is becoming more and more service oriented, "DIY will never die, but is expected to have a lower share of the total motor oil market in the years to come," Boehm said.

The Valvoline president traced the trend of oil company involvement in quick lubes:

Pennzoil, the pioneer, began opening company-owned outlets in the 1970s. It became the leading U.S. supplier of quick lubes with the signing of a joint-venture agreement earlier this year with Jiffy Lube.

Quaker State, a longtime supplier of independent quick lube chains, recently acquired Minit Lube.

Valvoline, which has supplied quick lube businesses through distributors since the late 1970s, recently announced plans to purchase a 10-year-old chain of 60-plus outlets located primarily in the upper Midwest and New York state, and has "an aggressive expansion plan."

Boehm noted that some oil marketers "who aren't now in the quick lube business may be considering doing so," on their own or via franchising. "The only advice I could give you is to exercise caution," he said. "It is risky, simply because the market is in its adolescent stage, nowhere near maturity."

New Regs Might Hurt DIY

Describing trends in the motor oil business, Boehm said environmental concerns in the DIY market could hasten the growth of quick lubes in two ways:

"New laws could be passed to make it more difficult for the consumer to change his own motor oil. If that happens, quick lubes will benefit substantially."

Laws could be passed governing the disposal of plastic bottles, in which case "the DIY market would be negatively affected, and quick lubes, again, would benefit."

Another trend is a slow switch of market domination from 10W-40 to 5W-30 and 10W-30, "thanks to General Motors, Ford and Chrysler. The lower-viscosity oils will help their engines meet fuel economy standards and allow faster starts in colder weather," Boehm explained.

The Valvoline president said "trade concentration" is growing in virtually all retail fields—food, drugs, hardware, building materials and supplies, and in the automotive aftermarket.

In the latter, the reason is "earnings of auto parts retail chains have not kept pace with sales growth," adding that "some chains are using acquisition as a growth tool."

Boehm chronicled how most major oil companies lost the motor oil market to independents:

In the shift to do-it-yourself and mass merchandising, "independent motor oil marketers welcomed the changing distribution systems and increasing volumes with open arms. They invested time and manpower in learning how to cater to the DIY market and the retailers who dominated it.

"By the time the shortages of the late '70s arrived, it was too late for many marketers to hold onto their eroding motor oil market shares. Some had lost out on the learning curve.

"By the time consumers had shifted their behavior to DIY, and subsequently their loyalty to independent brands, some major companies found themselves on the outside looking in. Consumer purchase habits had changed, and the independent marketers were way out front."

Changing Patterns

At Valvoline, the changing distribution patterns caused the company to adopt a "packaged goods" marketing approach, Boehm said. "We began to look at motor oil just as Procter and Gamble looks at soap or deodorant, or the way Coke or Pepsi look at their products.

In the midst of these changes, the large auto parts retail chains—Chief, Grand Auto, Checker, Pep Boys, Trak Auto, Nationwise, and others—emerged, becoming supermarkets for auto parts and supplies.

John F. Boehm

Among traditional oil distributors, the "strong, innovative" ones found a niche in becoming "good, solid, service-oriented, direct-to-store distributors to supply everyday requirements," while the chains purchased direct from the manufacturer for the "sale events."

Boehm traced the market-share trend among the top motor oil suppliers:

Prior to 1980, Quaker State was No. 1 in the passenger-car and light-truck motor oil market, followed by Pennzoil, with Valvoline and Texaco's Havoline running neck and neck for third. Mobil was fifth, followed by Castrol and Shell.

During the next four years, the "Big Five" emerged: Quaker State, Pennzoil, Valvoline, Havoline and Castrol.

The "Big Five," as well as some other motor oil suppliers, are waging "dogfights" in motor oil marketing on three fronts: packaging, marketing and pricing, Boehm said.

Packaging Decisions

In packaging, after the price of oil skyrocketed in the 1970s, Valvoline switched in 1980 from 24-quart cases to 12-quart cases. "The 12-quart case artificially cut the cost of a case of oil in half. It was easier for the do-it-yourselfer to handle and it was easier for the retailer to promote," Boehm said. The rest of the industry followed suit.

In 1984, Quaker State switched 100% to quart plastic bottles. After attempting an alternative package that didn't work out, Valvoline is about to complete a nationwide conversion to plastic bottles.

The marketing battles have been even more fierce, Boehm said. Marketing budgets have "gone off the charts" in the past few years.

It used to be that motor oil suppliers could run media advertising in the spring and fall, but now they must do it strongly all year round, he said.

In motorsport sponsorship, 15 years ago Valvoline was the dominant brand in most forms of auto racing, but today "all leading brands have entered the sport, trying to align with the best teams available," Boehm said.

The most severe competition among motor oil marketers is in pricing, he reported. Top motor oil brands must compete not only with national brands, as Coca Cola or Pepsi do, but also with regional brands.

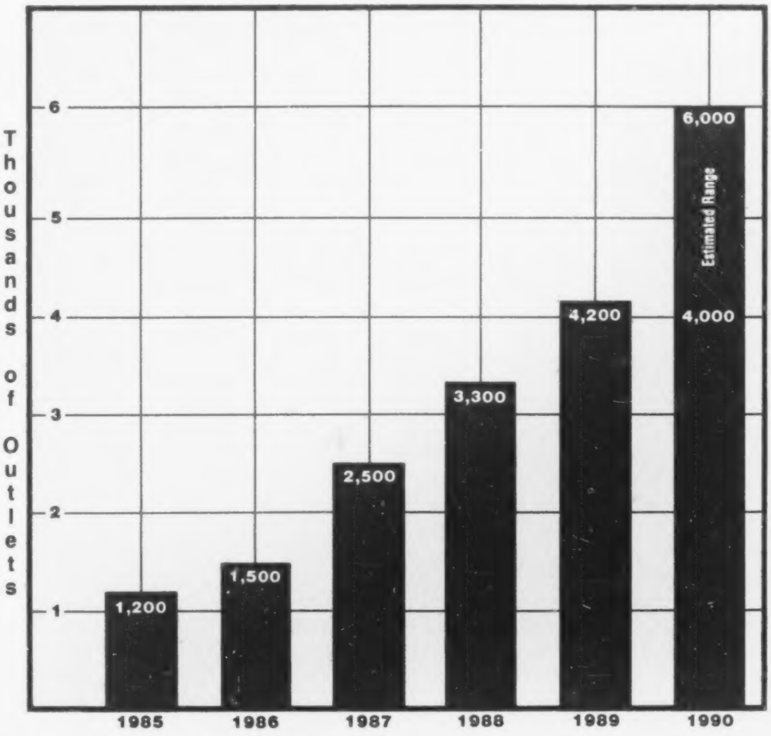
"The price sheet isn't the key any more. It's the deal. You almost have to be an accountant and a statistician to keep up with everybody's current motor oil promotion, but then I'm not telling you anything new," Boehm told jobbers.

Boehm said motor oil suppliers came under criticism recently because their prices did not fall as much as crude prices. He said this expectation is based on a misunderstanding of the cost breakdown of motor oil compared with that of other refined petroleum products, such as gasoline.

Showing a breakdown of packaged motor oil costs, Boehm said, "Motor oil has more items of fixed and variable costs than gasoline, and fluctuations in the price of crude oil don't impact on motor oil as they do on gasoline. That's why you don't see motor oil price patterns paralleling those of gasoline."

As competition in the motor oil market increases, it intensifies the process of "survival of the fittest," Boehm said. He urged jobbers, "Make sure teamwork is a part of your game plan. It doesn't matter if you sell gasoline, fuel oil or motor oil. Align yourself with good, loyal suppliers who understand your needs and your problems."

Projected Growth of U.S. Quick Lube Outlets



Source: Valvoline 1988-89, NPN interpolations.

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Why an Oil Patch Jobber Turned to C-stores

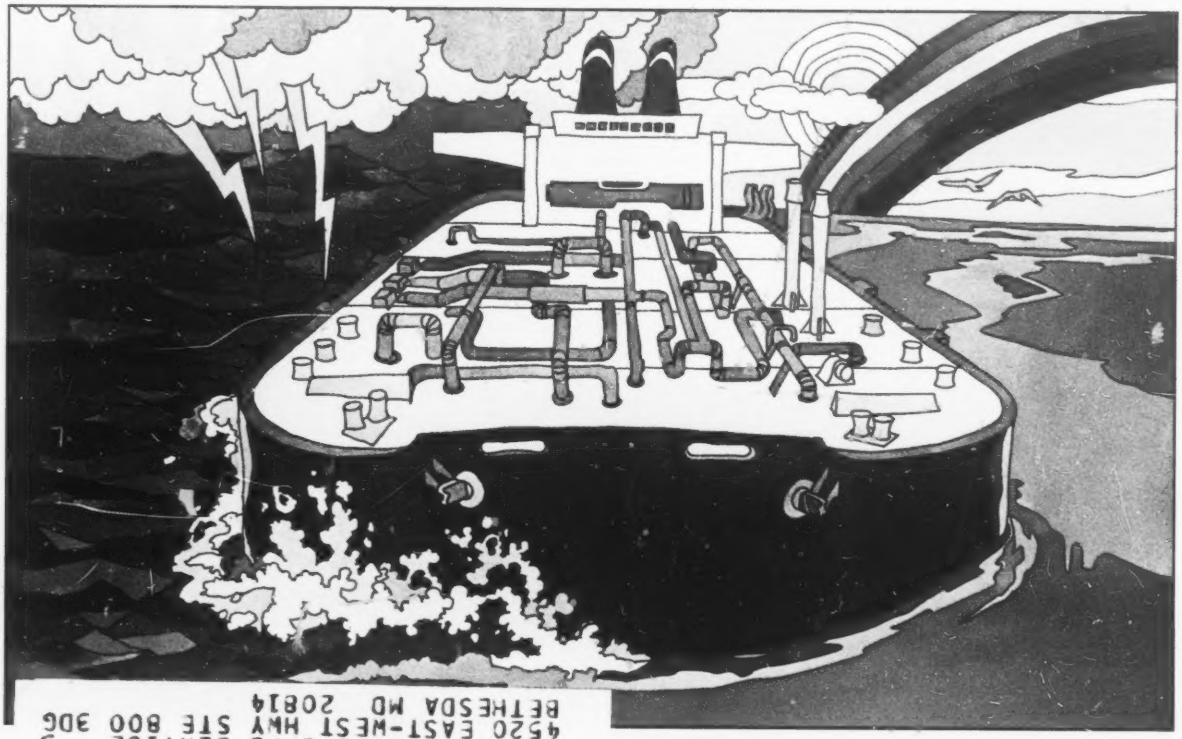
Trends: Will Blending Pumps Ease Tank Woes?

Why Keller Oil Likes New, Old Strategies

NPN

National Petroleum News

OUTLOOK '87 "IFFY"



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January is the time for both resolutions and forecasts. This year is no exception. While most forecasts point to another lackluster year for oil marketers, OPEC could prove otherwise. **Page 32**

For the Keller family of Central Illinois, petroleum marketing has been a way of life for two generations. Here's a look at how this family operation has blended traditional business practices with marketing techniques like C-stores. **Page 42**

WARNING
DANGEROUS CARGO
NO VISITORS
NO SMOKING
NO OPEN LIGHTS

How does a marketer serving the hard-hit offshore production industry cope with the current industry downturn? By branching out into C-stores and other less traditional efforts. **Page 46**

• TRENDS

Blender/dispensers: Will They Ease Tank Worries?

Something that's been around for more than three decades is suddenly showing promise of being the answer to a maiden's prayer in enabling gasoline marketers to cope with some of the nightmares associated with underground storage tanks and liability insurance costs.

Listen close because there's more to it than meets the eye at first glance. It is glimmering on the horizon only because of a combination of circumstances and events over and above the razzle-dazzle of electronics, POS items, debit cards and so on.

Back in the mid-1950s, Sun introduced a blender/dispenser which gave motorists an option on octane numbers, from the economy grade to super-premium, simply by turning a dial on the face of the pump.

Eventually, the dial gave way to a lever and, in more recent times, to digital push buttons.

But the fundamentals are still the same: Only two underground storage tanks are involved, one containing the low-octane economy grade and the other the highest octane available.

Two hoses enclosed in an outside shell carry the gasolines from each tank to the nozzle, where the blending is done electronically at the blink of an eye to the prescribed number.

Sun, at various times through the years, has marketed as many as eight intermediate octane numbers from a single pump and one hose. It long ago proved the concept is viable and acceptable to motorists.

But conditions have changed dramatically in gasoline marketing in recent years.

Underground storage tanks have suddenly become environmental menaces with all sorts of expensive and restrictive regulations being imposed at local, state, regional and national levels, and more yet to come. Liability insurance costs have skyrocketed and in many cases policies are either unattainable or unaffordable.

Traditional gasoline marketing has more or less dictated the need for three to five storage tanks per station and almost as many dispensers—for subregular, regular, premium and super-premium grades, and perhaps diesel fuel and/or kerosine, as well.

The transition to unleaded gasolines, which began in the mid-'70s, and the diesel skyrocket that went up in the early '80s, extended most of these requirements with separate dispensers and tanks for the leaded and unleaded grades and the other products.

Diesel has pretty well come and gone except for the truck stops. Leaded premium vanished first, and leaded regular is on the way out now. It looks like leaded regular will be out of contention by 1989, except for specialty product stations. Demand will be down to about 10% by then. The all-unleaded economy is rapidly coming of age. Some suppliers have already dropped leaded gasoline in selected marketplaces and it can be anticipated that this trend will accelerate this year and next.

This makes the potential of the blender/dispenser suddenly impressive.

Marketers, for example, could get by with two storage tanks instead of three or four, thereby halving their environmental problems, responsibilities and fears, as well as their insurance costs since the liability exposure would be reduced proportionately.

Since one blender/dispenser with two hoses could service both sides of an island, would there be a need for two or three dispensers per island anymore?

This is downright heresy where equipment manufacturers are concerned because only one or two are offering this sort of product now. But if the marketing emphasis shifts, they can quickly adapt to the new concept. They've been doing that right along. Competition, like necessity, is also the mother of invention.

The idea isn't necessarily a quick fix for gasoline marketing. The blender/dispensers are more expensive than conventional pumps for one thing. There is also the need to dig up or abandon tanks, redesign islands, etc. For ground-up stations, however, they should be a natural. But bottom-line economics will be the telling factor in the long run. That's the way the gasoline business operates.

—J. Richard Shaner

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

OCTOBER	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$ .837	$ .771	$ .831	$ .987
Regions:				
Northeast	.853	.779	.828	.986
North Central	.828	.780	.830	.983
South	.821	.746	.814	.977
West	.853	.786	.851	1.009

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	11/28/86	11/29/85
Gasoline (total)	224,507	213,426
Gasoline (Unleaded)*	122,681	106,294
Jet Kerosine	41,875	38,022
Distillates	147,520	135,856
Residual	46,460	46,885

**Included in gasoline total.*
Source: American Petroleum Institute.

Lube Sales Show Marginal Increase; Multigrades Stay Strong—NPRA Study

Lubricant sales rose fractionally in 1985, National Petroleum Refiners Assn. says in its latest annual study released in October.

The increase amounted to a mere 5 million gal. out of a total of 2.3 billion gal. for the year. This was an increase of 0.2% over 1984, hardly enough for a statistician to notice.

This total embraces all engine oils, including transmission and hydraulic oils, gear oils and grease. The latter, normally a solid, was converted to gallons by assigning a ratio of 1 gal. for each 7.5 lbs.

Consumption of conventional motor oils, i.e., those used primarily in passenger car engines, slipped slightly in 1985—about 9 million gal. out of a total of 1.1 billion gal. The 1984 demand, for the record, was 1,093 million gal., while for 1985 it was 1,084 million gal.

There were no changes of significance in the channels of distribution, the NPRA report says. A little more than half of all motor oil sales continue to be made through the retail segment—service stations, mass merchandisers, discount houses and the like. Commercial sales, that is those for fleets, farms and government, continue to take about one-third of the output.

Among the more interesting facets of the 1985 report are the tables dealing with multigrade and monograde consumption patterns.

In 1982, for example, 55.5% of the motor oil purchases were for monogrades. By the end of 1985, that figure had eroded to 35.3%—20 full percentage points.

There was a small upward movement in the multigrade purchase patterns in the retail segment. These moved from 69.1% in 1982 to 74.7% in 1985. More strikingly, the commercial area sales indicate the tide is running strongly toward multigrades and away from monogrades. In 1982, 65.4% of the commercial purchases represented monogrades. Last year, they had dropped to 53.9%.

The peak year for lubricant sales was 1979. The total was 2.5 billion gal., 6.6% more than the 1985 figure. Grease sales were higher in 1979, too—8 million gal. more, or a difference of 11.8%.

Copies of the NPRA report may be obtained by contacting NPRA's headquarters in Washington, D.C.

Lube Oil Sales in the U.S.*

	1985 (mil. gal.)	1984 (mil. gal.)	1983 (mil. gal.)	1982 (mil. gal.)	1979 (mil. gal.)	% Chng. '85 v. '84	% Chng. '85 v. '79
					(Peak Yr.)		
All oils	2,272	2,271	2,114	1,198	2,435	0.3%	(6.5%)
Grease**	60	61	55	57	68	(1.6)	(11.8)
Total Lubes	2,337	2,332	2,119	2,049	2,503	0.2	(6.6)

*Includes automotive and industrial oils, but not aromatics or waxes;
**conversion rate 7.5 lb = 1 gal.

Channels of Distribution: Automotive Oils Only[1]

	1985	1984	1983	1982
Total Vol. (mil. gal.)	1,364	1,376	1,278	1,204
Retail[2]	52%	55%	55%	53%
Commercial[3]	35%	36%	37%	36%
Factory Fill	3%	4%	3%	4%
Undistrib.	10%	5%	5%	7%

[1] Includes engine oils, transmission and hydraulic fluids, and gear oils.
[2] Retail means oils sold through service stations and other retail outlets such as auto parts stores, car dealers, truck stops, chain stores, drug stores, discount stores, etc.;
[3] Commercial means oils sold to commercial accounts such as industrial plants, fleets, farm, government, etc.

Engine Oils Only: Multigrades vs Monogrades*

	Liquid Vol.	Multigrade	Monograde
	(mil. gal.)	(by percentage)	
1985	1,084	64.7%	35.3%
Retail	611	74.7%	25.3%
Commercial	374	46.1%	53.9%
1984	1,093	61.6%	38.4%
Retail	654	73.1%	26.9%
Commercial	392	41.1%	58.9%
1983	1,019	58.2%	41.8%
Retail	610	71.0%	39.0%
Commercial	371	37.6%	62.4%
1982	957	44.5%	55.5%
Retail	555	69.1%	30.9%
Commercial	352	34.6%	65.4%

*SAE J-183a only; data on factory fills and undistributed not significant in this table.
Source: National Petroleum Refiners Assn., 1985 Report on U.S. Lubricating Oil Sales, published October 1986.

Jiffy Lube Strengthening Market Share in S.W.

Jiffy Lube International, Inc. is expanding its franchise system in the Southwest with transactions that could provide the company with 53 quick lube sites in Missouri, Oklahoma, Texas and New Mexico.

W.J. Hindman, Jiffy Lube chairman and CEO, says the company has purchased Rapid Lube & Oil Inc. of Tulsa, Oklahoma, which operated six oil change centers in Tulsa and two in Kansas City.

Jiffy Lube also has agreed in principle with Kwik Change Oil Co. of Lubbock, Texas, to enter into an option agreement for the purchase of 13 sites in Texas and the franchise rights to another 13 centers in Texas and New Mexico, the company says.

In addition, Jiffy Lube says it has acquired the option to repurchase the franchise rights to eight Dallas centers from a franchisee.

If all of the transactions are completed, Jiffy Lube will have invested more than $10 million to develop these markets, the company says.

Jiffy Lube claims to be the largest operator and franchisor of quick lube centers in North America, with 422 centers operating coast to coast.

Colorado Marketers May Be Forced To Blend MTBE or Ethanol in Winter

Jobbers in Colorado's four largest markets face the possibility of being forced to blend MTBE or ethanol into their gasoline during the winter months in an effort to meet Clean Air Act guidelines.

The state's Air Quality Control Commission is considering a proposal that would require oxygen levels of 2% in motor fuels by November 1988, and oxygen levels of 3.5% by November 1990.

Roy Turner, executive director of the Tri-State (Colorado, Wyoming, New Mexico) Petroleum Marketers Assn., says the proposal would affect gasoline outlets in Denver, Fort Collins, Greeley and Pueblo during the months of November through March.

Turner says these metropolitan areas are listed as non-attainment areas and are subject to a loss of federal highway funds.

He adds, the areas are subject to heat inversions in which the cold upper air traps pollution close to ground level. Adding oxygen to the gasoline decreases the carbon monoxide levels when the fuel is burned, Turner says.

Turner represented marketers on the governor's task force examining the pollution issue. He says marketers see problems with the blending proposal.

First, he says, there is a question of MTBE supplies. MTBE will add 2% more oxygen to gasoline, but marketers wonder if there will be enough immediately available if the proposal is passed, Turner says.

Then there is pricing. Turner says Denver County is a non-attainment area, but a neighboring county is not. The forced blending of MTBE or ethanol could raise the street price of gasoline by 4¢-5¢ gal., he says, while across the street in an unaffected area, prices would be lower.

A third area of concern for jobbers is what happens when the 3.5% oxygen level takes effect. Turner says U.S. Environmental Protection Agency waivers only allow MTBE to be blended up to a 2% level. Requiring a 3.5% oxygen level would require blending ethanol, he says.

Ethanol and MTBE, however, cannot be blended into the same gasoline, Turner says. That means jobbers previously blending MTBE to reach the 2% oxygen level would have to find a supply of product without it.

Compounding this problem, Turner says, is the fact that more suppliers are using MTBE as an octane enhancer as EPA phases out lead from gasoline.

Colorado dropped its 5¢ gal. tax exemption on alcohol-blended fuels in June 1986. Turner says several large marketers in the state soon after began advertising the point that their product contains no ethanol, and questions if consumers would accept ethanol blends.

The Colorado Air Quality Control Commission is expected to reach a decision in March.

State Motor Fuel Tax Rates

(cents per gal.)

State	Gasoline	Diesel	Gasohol	Added Tax (%)	Local Option
Alabama	13	14	10		yes
Alaska	8	8	0		
Arizona	16	16	16		
Arkansas	13.5	12.5	13.5		
California	9	9	9	6	yes
Colorado	18	20.5	18		
Connecticut	17	17	16	2	
Delaware	13	13	13		
Dist. of Col.	15.5	15.5	15.5		
Florida*	9.7	9.7	7.7		yes
Georgia	7.5	7.5	7.5	3	
Hawaii	11	11	11	4	yes
Idaho	14.5	14.5	10.5		
Illinois	13	15.5	13	6	yes
Indiana	14	15	14	5	
Iowa	16	17.5	15		
Kansas*	11	13	8		
Kentucky*	15	12	15		
Louisiana	16	16	16	1	
Maine	14	14	10		
Maryland*	13.5	13.5	13.5		
Massachusetts*	11	11	11		
Michigan*	15	15	15	4	
Minnesota	17	17	14.5		
Mississippi	9	10	9	6	yes
Missouri	7	7	7		
Montana	17	17	17		
Nebraska*	17.1	17.1	14.1		
Nevada	13	13	12		yes
New Hampshire	14	14	14		
New Jersey	8	11	0		
New Mexico	11	11	0		
New York	8	10	8	6.75	yes
North Carolina*	15.75	15.75	15.75		
North Dakota	13	13	5		
Ohio	12	12	12		
Oklahoma	10	10	10		
Oregon	12	11	12		yes
Pennsylvania	12	12	12	6	
Rhode Island*	15	15	15		
South Carolina	13	13	7		
South Dakota	13	13	11		yes
Tennessee	17	15	13		yes
Texas**	15	10	5		
Utah	14	14	14		
Vermont	13	14	13		
Virginia	17.5	15	15		yes
Washington	18	18	16.2		
West Virginia*	15.35	15.35	15.35		
Wisconsin*	17.5	17.5	17.5		
Wyoming	8	8	8		
Average Gasoline Tax	**13.26**				

* Variable tax expressed in cents per gal.

**Unless Texas legislature takes action, tax will drop to 10¢ gal. on Sept. 1.

Source: Highway Users Federation, rates effective January 1, 1987.

Note: Federal Excise Tax on gasoline is an additional 9¢ gal.

The 1987 Outlook: Will OPEC Unrest Upend Routine Industry Forecasts?

Most industry, business and government forecasters anticipate a predictable, prosaic year for oil marketers in 1987, but there's a real cliffhanger out there that could change everything and impact heavily on supplies, prices and profits by late summer or early fall.

The big question mark as the new year gets underway is whether OPEC can come to terms with itself, reach a cartel consensus in the next month or two and really make it stick this time. If it does, all bets are off.

The big difference in January 1987 is the emergence of a militant Iran as the power broker in the Middle East, replacing the more moderate Saudi Arabia with a contentious, beleaguered regime whose instability and hysterical, anti-American madnesses are known around the world.

But OPEC has compiled, since the bottom began falling out several years ago, a poor track record for coordination and cooperation on anything. Its members have repeatedly undercut each other on prices, production quotas and just about every scheme the ministers could plan or plot to halt the erosion of their hold on crude marketplaces and their loss of dominance internationally.

By J. Richard Shaner
Executive Editor

When the Saudis bounced their longtime oil minister, Shaikh Ahmed Zaki Yamani, in October, and the Royal Family positioned itself with Iran's minimum price arguments and a return to 1984 quotas, the possibility that this may have been a turning point and that economic realities will be the governing factors this time around, make the Mid-East picture a bit more ominous than usual.

There also is much speculation that if Iran should suddenly win its war with Iraq or negotiate an ending, it could then swing its weight like a meat axe [*NPN*—Dec. '86, p23]. Most of the oil-producing nations in the Mid-East actually fear the violent Iranians and worry whether they might be the next targets of their wrath. On the other hand, if OPEC's members continue to do as they have been doing in recent years, their rantings and "salvation" proposals will have little impact on actual market conditions. The key point at this time, is that there is still much oversupply to be eaten up, so there are no shortage conditions in sight for 1987. It'll be springtime before marketers have a good fix on this, however.

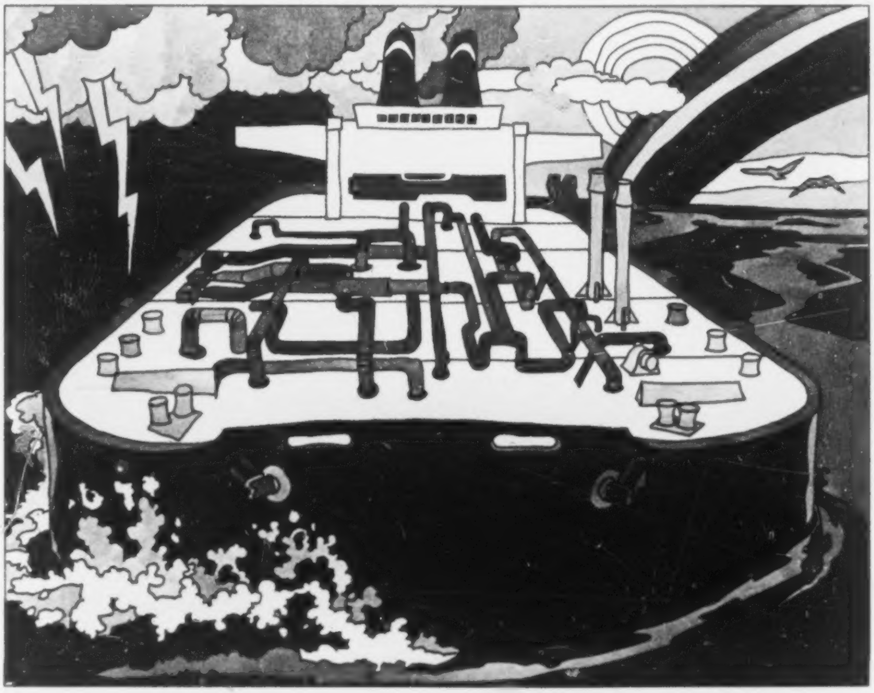
Otherwise, government and industry forecasters are generally agreed on what happened in 1986 and what's likely to happen in 1987 (See tables on Pages 35 and 38).

In substance, what they say is that the year just ended was up a surprising 2% to 3% over 1985, and the year coming up will be only slightly better, a skinny 1% with prices edging upwards, margins holding firm and the overall outlook, well just bland, that's all.

The government projections are based on $17 bbl. crude at the end of 1987. This would be an increase of $5 bbl. over the tailend of 1986, but still $2 bbl. below the $19 bbl. that prevailed at the beginning of last year. If crude prices suddenly spurt into the $25 bbl. range, look for "buck-a-gallon-plus" gasoline almost in lockstep.

Billions for Marketing

An encouraging factor for marketers in 1987 is McGraw-Hill's annual survey of planned capital expenditures, which indicates that the marketing segment will continue to get a high level of dollar transfusions despite the horrendous cutbacks in exploration, production and elsewhere, including the restructuring of managements and sharp personnel reductions (See table on Page 40).



The McGraw-Hill forecast, put together this year by its Data Resources, Inc. subsidiary instead of its inhouse Economics Department, projects capital investments in the marketing segment of $3.88 billion in 1987 and $3.93 billion in 1988, on top of $3.52 billion in 1986.

The forecasts for 1986 and 1987 are only 11% and 3% below the pre-collapse projections made last year [*NPN*—Feb. '86, p29]. It was to be expected, of course, that 1986's retrenchments would be relatively sharp. But against those are the twin facts that the 1986 marketing spending was a good round $3.53 billion and that 1987, at $3.88 billion, reflects an increase of 10% over 1986.

These billions of dollars are changing the face and dynamics of oil marketing—the modernization programs, new and bigger gasoline stations and C-stores, electronics, computerization and point-of-sale (POS) equipment, soaring real estate costs and the like.

Marketing broke into the $3 billion a year class in 1984. Thus the five-year span of actual, estimated and planned spending on marketing facilities in 1984 through 1988 totals more than $18 billion. In light of the fact that less than a decade ago, marketing had yet to see as much as $1 billion spent in any one year, this remarkable achievement emphasizes the latter-day concept that downstream, as well as upstream, must produce profits for the corporation. That the investments have been wise is attested to by the fact that virtually all of the big oil companies note in their quarterly reports that downstream profits are contributing significantly to, and/or sometimes bailing out, the corporate nets.

For the industry as a whole, McGraw-Hill anticipated spending of $34.5 billion in 1986, down 30% from the preceding year; $33.3 billion in 1987; and $30.2 billion in 1988. That's about what the oil companies used to spend on exploration and production alone, before the roof fell in.

McGraw-Hill makes its survey in the fall—generally mid-September to mid-October—via questionnaires mailed to approximately 800 to 1,000 small, medium and large corporations on spending plans for plans and equipment, and squares its conclusions with government and financial data.

1986-87 Overviews

Here, in a nutshell, are highlights of the government-industry forecasts:

DEMAND

Total demand—At 16.2 million b/d in 1986, up 2.6% to the highest level of consumption since 1980; at 16.4 million b/d in 1987, up another 1.2%. The peak year for demand was 1978, when it zipped along at the 20 million b/d level.

Motor gasoline—Slight differences between government and industry. Government says 7.02 million b/d in 1986, up 2.8% over 1985, and 7.0 million b/d in 1987, down 0.3%. Industry says 7.0 million b/d in 1986, up 2.4% in '85, and 7.1 million b/d in '87, up 1.0%. By way of contrast, peak gasoline demand occurred in 1978, when it averaged 7.4 million b/d. Until 1986, it hadn't been over the 7 million b/d level since 1979. In July of 1986, riding the crest of a surprising 5% increase in highway travel, it shot up to an average of 7.5 million b/d.

Distillates—Up slightly in 1986, about 1%. Industry sees 3% increase in 1987, but government says 4.5%. Both, however, agree that diesel and industrial activity will account for most of the gains, not space heating.

Residual—Up sharply in 1986, but flattening out to minus signs in 1987.

PRICES

Motor Gasoline—Will average out to 94.0¢ gal. in 1986 and 97.8¢ gal. this year (including taxes) for all grades and services. Federal forecasters say it'll average 90.0¢ to 97.0¢ in the first half and $1.02 in the third and fourth quarters, including taxes.

Diesel Fuel—A year-long average of 87¢ gal. in '86 and 91.3¢ gal. in '87. First half will range from 86¢ to 89¢ and second half, 93¢ to 97¢. Taxes are included.

No. 2 Heating Oil—On a year-long basis (taxes excluded), wholesales will average 47¢ gal. and 51¢ gal. in 1986 and 1987, respectively, compared with 78¢ gal. in 1985. Retails will average 77¢ gal. and 80¢ gal. last year and this year, respectively, versus $1.05 in 1985. On a quarterly basis, wholesales will start out at 48¢ gal. this month and edge up to 55¢ gal. by the fourth quarter, while retails will start out at 75¢ gal. in the first quarter and wind up the year at 87¢ gal. This means that wholesales will be up 11¢ gal. and retails 19¢ gal. in the last quarter of this year, versus the last quarter of 1986.

Residual—An average of 35.8¢ gal. for 1986 and 41¢ gal. for 1987. The fore-

Unease Over Coming Year Clouds Marketer Ranks

Aside from what all experts might be forecasting, the front line troops of the petroleum marketing industry generally say they have a gut feeling that 1987 is going to be a highly competitive one. Possibly dramatic changes in the crude oil supply and price picture could add even greater volatility to the marketplace, some believe.

A general feeling of unease about the coming year seemed to hang over recent autumn industry conventions. These included the Petroleum Marketers Assn. of America (PMAA), the Society of Independent Gasoline Marketers of America (SIGMA), the American Petroleum Institute (API) and the National Assn. of Convenience Stores (NACS).

Branded and unbranded independent gasoline marketer members at the PMAA and SIGMA conventions generally said they could hardly expect 1987 to match 1986 insofar as average margins are concerned.

There were unusual conditions in early 1986 which resulted in the kind of margins gasoline marketers dream about, but rarely experience. When crude oil prices went into a free fall beginning about a year ago, there were brief periods of very good profit margins at both the wholesale and retail price levels.

Those conditions were pretty well gone by late 1986, however, and marketers at the fall conventions were once again talking about some rock-bottom situations.

"It's back to where you can't figure out how some of your competition can sell so low," said the gasoline manager of one large C-store chain at SIGMA's meeting in Houston. At the time, two of his competitors were posting 59.9¢ gal. for leaded regular and 67.9¢ for diesel. The retail gasoline price was several cents below the cheapest wholesale price he could find, said this marketer, while the diesel posting

(Continued on following page.)

Marketing expenditures should increase 10% this year.

Marketer Worries, Continued . . .

was 2¢ to 3¢ gal. over his buying price.

F.C. (Tally) Roberts of Acme Retail Inc., Gastonia, N.C., said retail prices in some markets of the always tough Carolinas by mid-November were running 3¢ to 8¢ gal. below cost for leaded regular. To make matters worse, Roberts added, some marketers were beginning to lower their unleaded retail postings. "For awhile, we were just giving leaded away. Now, some are beginning to take the top two grades (of unleaded) down so we have nothing left."

Roberts sees 1987 as shaping up "worse than 1986."

Marketers at PMAA's meeting in Denver seemed to be a little less pessimistic about the outlook for the year. They were still aglow over what, for most, had been a very profitable year, and a few here and there even said they were still enjoying rack-to-retail margins as high as 15¢ gal. Other members from tough markets like Houston, however, can only dream of such high markups.

Here's how Nelson Rusche, a large gasoline/car wash/C-store marketer, describes the situation in that city:

"The market has been poor for jobbers here in Houston in 1986. Margins are not worth a damn. Unfortunately, I don't see any light at the end of the tunnel. Usually, there's some blue sky somewhere, some aspect of your business that looks promising or hopeful. But I don't see any bright spots right now. Part of this, of course, is due to the region's economic situation. Our economic problems in Texas are monumental.

"I expect the situation to get worse in 1987—margins, profits, competition. The squeeze on margins is terrific. Currently, we're making 0.9¢ gal. margin above our cost on super unleaded. It costs 1.5¢ gal. to haul the product.

"The days when a marketer could make it on gasoline alone are over. Now, you have to diversify to survive, couple your gasoline with other profit centers—fast food, car washes, automotive service, etc.

"We need a return to adequate functional discounts from suppliers, to get margins back to where they should be. We can't keep subsidizing the majors' gasoline sales.

"I expect to lose about $100,000 a year in tax float when the new excise tax rules take effect."

Retailers who started out in the convenience food store business and then added gasoline tend to see the coming year pretty much like gasoline marketers do, according to interviews with several at the NACS convention in New Orleans in early October.

Like some branded distributors at PMAA's meeting, there were C-store operators in New Orleans still talking about the nice 15¢ to 20¢ gal. margins they enjoyed earlier in the year. Most were like a Virginia store operator, though, who said he had seen his margins drop from that level down to around 4¢ or 5¢ gal.

Some at the NACS convention, though, said they don't really rely on gasoline that much for profits. For these, the self-serve gasoline pumps have served their purpose if they cover some of their operating costs and pull more traffic into their stores.

At the same time, some of the larger C-store chains continue to increase their investments in both their stores and gasoline facilities. Most of these are trying to move from secondary to prime locations and complain that "the petroleum guys have (most of) the prime locations locked up."

But just like the gasoline marketers, some C-store chains in depressed markets have been having a tough time and they see a tough 1987 ahead.

In Houston, V.H. Van Horn, president and chief executive of National Convenience Stores (NCS), finds that city's depressed economy just as bad for his Stop 'N Go stores as Nelson Rusche does. NCS had enjoyed 38 consecutive quarters or record earnings through 1984 before its earnings curve began a downward plunge in early 1985. Since then, it has had to sell off some stores, close others, restructure its organization to reduce costs and adopt new marketing strategies.

Van Horn thinks the company is well on its way toward recovery now, and it's investing millions in what it calls its new "hex" design store. These stores are designed to appeal to a broader range of customers and, among other things, have average gasoline sales of 100,000 gal./month or more.

But increased sales for the NCS stores in Houston and other parts of that state won't come easy, Van Horn says, because he doesn't see much recovery in the economy in the city or state in 1987.

cast indicates the price will range from 38¢ gal. to 41¢ gal. in the current year.

Problems Galore in '87

Leaded gasolines are fading from the domestic marketing scene and some companies have already dropped them entirely in selected marketplaces. The decline rate has been increasing in increments of five percentage points per year. By the end of 1987, leaded gasolines are expected to command only 25% of the nationwide market.

This transition has precipitated the introduction of a new mid-grade unleaded at 89-octane as a replacement for the vanishing 89 leaded gasoline. This can be considered the forerunner of an all-unleaded economy with octanes of 87 for regular, 89 for mid-grade, and 92 to 93 and up for premiums.

On the horizon, too, is the probability that many retailers may shift over to multigrade dispensers which, like the ones Sun has been using for years, enable them to achieve a variety of octane levels by pushbutton mixing at the nozzle. It makes much sense because, with leaded approaching oblivion and diesel almost gone and forgotten at conventional stations, there'll be a basic need for only two storage tanks instead of today's three or four. This is even more meaningful, in light of the spiraling costs of environmental regulations and insurance on underground tanks.

On the market already, are a variety of additives and enhancers to adapt unleaded gasolines to leaded needs for older vehicles and farm implements. In addition, there are concerns that the refiners' lead banks are running out faster than anticipated—they were supposed to last through 1987—so there's a reasonable likelihood that Environmental Protection Agency will issue its long awaited phasing-out date this year for all leaded gasolines except specialty products.

There will be no dearth of problems for oil marketers in 1987, among them the heightened pressures of insurance, underground storage tanks, imports, taxes, onboard canisters versus Stage II vapor recovery equipment, and the new war of words that burst out recently between the automobile manufacturers and the oil industry over the so-called "good" gasolines and those without a detergent or champion, to cite a few.

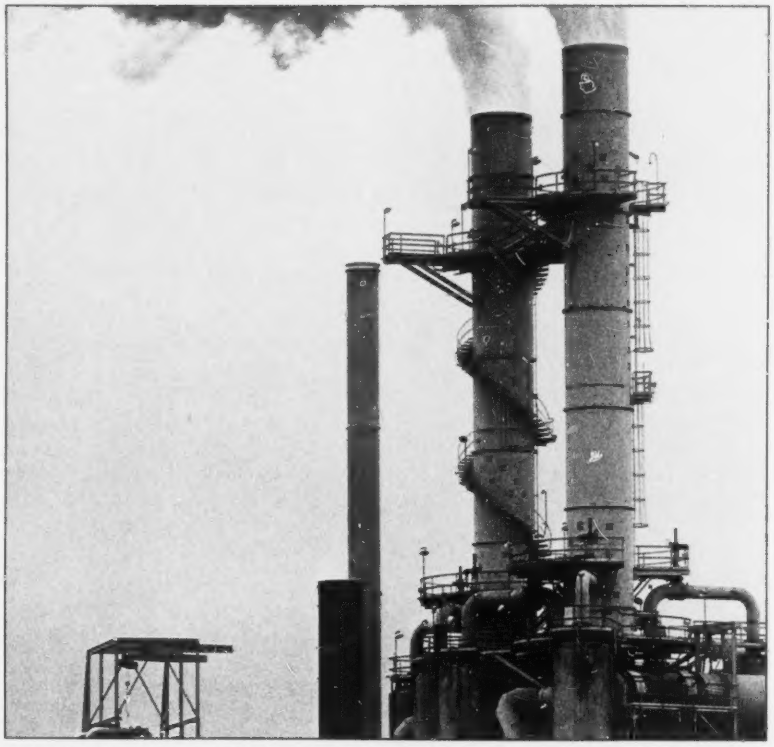
Imports could be major headaches on at least two fronts. With American production slumping and in sad disarray, imports

IPAA: '87 Will Be Better, But Not By Much

(Add 000 b/d except for closing stocks)

	1987 Forecast				Est.	Est.	% Chg.	% Chg.
DEMAND	1st Q	2nd Q	3rd Q	4th Q	1987	1986	87/86	86/85
Domestic Products								
Motor Gasoline	6,719	7,198	7,303	7,057	7,069	6,996	1.0%	2.4%
Aviation Fuels	1,319	1,336	1,369	1,374	1,350	1,321	2.2	6.0
Middle Distillates	3,504	2,835	2,702	3,178	3,055	3,002	1.8	0.7
Residual Fuel Oil	1,420	1,246	1,234	1,301	1,300	1,380	(5.8)	14.8
Other Products	3,430	3,471	3,695	3,620	3,554	3,437	3.4	(0.8)
Domestic Demand	16,392	16,086	16,303	16,530	16,328	16,136	1.2	2.6
Exports	786	724	707	736	738	735	—	(6.1)
TOTAL DEMAND	17,718	16,810	17,010	17,266	17,066	16,871	1.2	2.2
SUPPLY								
Domestic Production								
Crude Oil	8,579	8,511	8,479	8,432	8,500	8,769	(3.1)	(2.3)
Natural Gas Liquids	1,630	1,561	1,565	1,589	1,586	1,603	(1.0)	(0.4)
Total Production	**10,209**	**10,072**	**10,044**	**10,021**	**10,086**	**10,372**	**(2.8)**	**(2.0)**
Imports								
Motor Gasoline	354	438	450	379	405	376	7.7	(16.1)
Aviation Fuels	44	60	57	56	54	52	3.8	33.3
Middle Distillates	249	194	204	303	238	231	3.0	11.1
Residual Fuel Oil	653	573	601	595	606	616	(1.6)	20.8
Other Products	586	637	621	620	615	630	(2.4)	(5.0)
Total Products	1,886	1,902	1,933	1,953	1,918	1,905	(0.7)	2.0
Crude Oil Imports	3,664	4,302	4,487	4,310	4,191	3,916	7.0	27.0
Total Imports	5,550	6,204	6,420	6,263	6,209	5,821	6.7	17.6
Other Supply	879	772	738	890	823	812	1.4	7.5
TOTAL SUPPLY	**16,638**	**17,046**	**17,202**	**17,174**	**17,018**	**17,005**	—	**4.4**
Refinery Inputs	12,628	13,212	13,357	13,221	13,105	13,091	—	5.3
INVENTORIES (Add 000,000 bbl.)								
Motor Gasoline	225.50	224.80	221.50	221.60	221.60	226.10	(2.0)	1.2
Aviation Fuels	48.50	47.50	47.80	45.80	45.80	46.80	(2.1)	9.9
Middle Distillates	108.60	116.20	138.40	144.70	144.70	150.60	(3.9)	(0.7)
Residual Fuel Oil	41.90	42.60	43.60	45.40	45.40	46.10	(1.5)	(13.0)
Other Products	267.90	287.20	286.00	269.80	269.80	275.80	(2.2)	17.0
Total Products	692.40	718.30	737.30	727.30	727.30	745.40	(2.4)	9.7
Crude Oil	333.50	329.30	328.00	329.50	329.50	329.10	—	3.3
TOTAL STOCKS	**1,025.90**	**1,047.60**	**1,065.30**	**1,056.80**	**1,056.80**	**1,074.50**	**(1.6)**	**5.0**

N.B. Strategic Petroleum Reserve data are excluded in this summary. Source: Independent Petroleum Assn. of America Supply and Demand Report, Oct. 25, 1986.



As imported crude oil takes up the slack left from slumping U.S. production, calls are being heard for import fees and floor prices for domestic crude.

are projected to take up much of the slack and propel the U.S. towards 40%-plus dependency on foreign oil for the second time in recent history. Pressures for and against a much-talked about $5 bbl. tax on imported oil are certain to fan these controversial issues throughout the year.

Crude oil production in the so-called "lower 48" fell to the level of the 1950s in October—about 6.7 million b/d. This was about 400,000 b/d below the like period of 1985.

The plight of U.S. production led Chevron Chairman George Keller, who also is chairman of American Petroleum Institute's board, to propose—at the API meeting in November, no less—that the government intervene and set a floor of $16 bbl. to $18 bbl. for domestic crude.

Petroleum Marketers Assn. of America Executive Vice President Phillip Chisholm immediately responded with a "no way" comment. He reminded marketers that "our industry emerged in 1981 from that type of regulation," and that "the

Federal Forecast: Deja Vu One More Time

By the Year

	History		Projections	
	1984	1985	1986	1987
DEMAND (million b/d)				
Motor Gasoline (total)	6.69	6.83	7.02	7.00
Leaded	2.78	2.43	2.17	1.79
Unleaded	3.99	4.41	4.85	5.21
% Unleaded vs. Leaded	59.6%	64.6%	69.1%	74.4%
Distillate Fuel Oil	2.84	2.87	2.90	3.03
Residual Fuel Oil	1.37	1.20	1.38	1.25
TOTAL U.S.	**15.73**	**15.73**	**16.15**	**16.37**

	1984	1985	1986	1987
PRICES (per gal.)*				
Motor Gasoline**	$1.20	$1.20	$ .94	$ .98
No. 2 Diesel	1.15	1.15	.87	.91
No. 2 Heating Oil				
Wholesale	.83	.78	.47	.51
Retail	1.09	1.05	.77	.80
Residual***	.69	.61	.36	.39

*All prices include taxes except No. 2 heating oil. **Average for all grades and services. ***Average for all grades of sulfur.

same government that has the authority to set a minimum price (can also) set a maximum price as well." Ironically, the speaker who followed Keller at API—Mexico's highest petroleum official—criticized Keller's proposal and said his country would retaliate promptly. A Reagan Administration executive also took the occasion to affirm at the same time that the White House position is well-known and committed to free enterprise.

In Washington, a new ballgame is underway as Democrats took control of the Senate and installed a new committee chairman (See story on Page 23).

Among the national battles likely this year are the continuing threat of increased taxes, either in the form of an oil import fee or higher gasoline excise taxes as lawmakers search for any means available to reduce the enormous federal deficit; possible final underground storage tank and Stage II regulations; and the impending switch in motor fuel tax payment methods.

TEXACO
Products You Can Trust
Service Center

The decline in station population will continue, but at a slower rate.

Station Numbers, Sales Down in Forecast

Service station cashflows, which slumped badly and sadly in 1986, are expected to bounce back in 1987—but not enough to compensate for the nose dive in the year just ended.

A U.S. Commerce Department report that'll be published later this month will say that dollar sales for products and services at the outlets were down more than 10% in 1986 versus 1985, but that they'll recoup about half of that loss by next Dec. 31.

The service station population also skidded some more in both 1986 and 1987 projections. The rate of decline, according to the federal report, is expected to be less in 1987 than in 1986; nevertheless, the population figure will be under 120,000 later this year for the first time since the 1960s. **NPN**

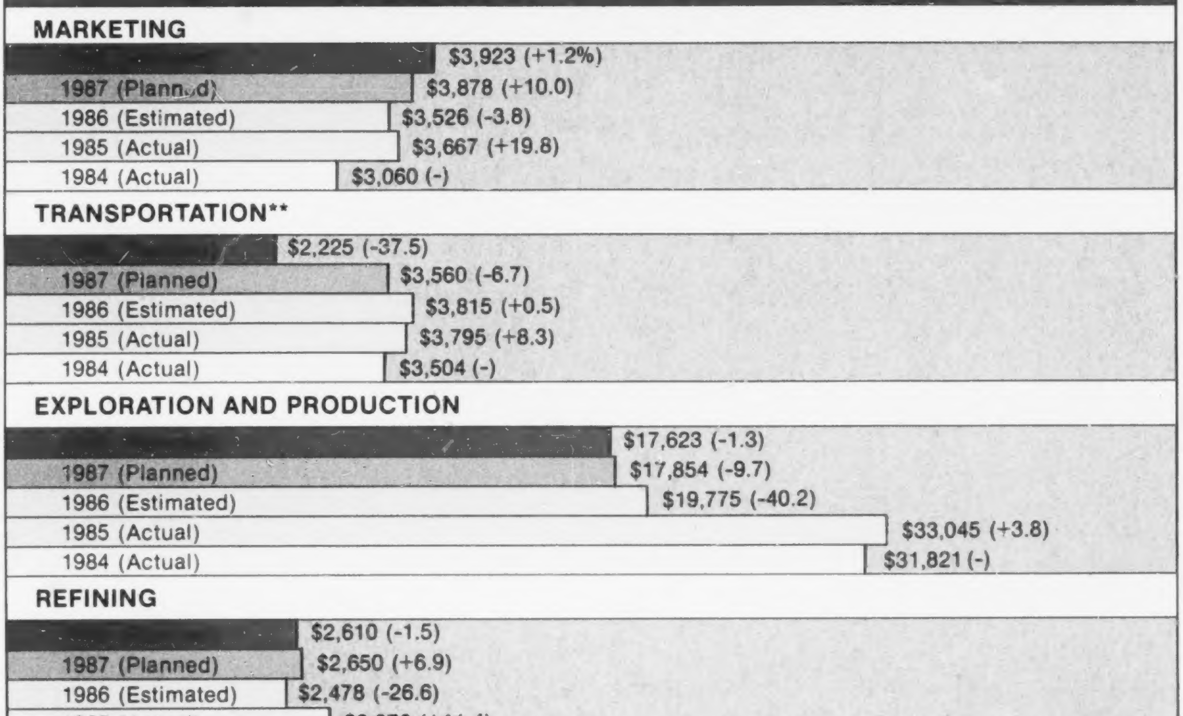
Quarterly Averages

1986				1987			
1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
6.64	7.09	7.32	7.04	6.67	7.17	7.14	7.00
2.15	2.27	2.24	2.03	1.83	1.88	1.79	1.67
4.49	4.82	5.08	5.02	4.84	5.29	5.35	5.33
67.6%	68.0%	69.4%	71.3%	72.6%	73.8%	75.0%	76.1%
3.28	2.73	2.54	3.05	3.30	2.88	2.78	3.18
1.42	1.34	1.37	1.40	1.23	1.21	1.16	1.40
16.06	**15.86**	**16.08**	**16.59**	**16.19**	**16.15**	**16.39**	**16.73**
$1.10	$ .93	$ .87	$ .86	$ .90	$ .97	$1.02	$1.02
1.04	.87	.77	.80	.86	.89	.93	.97
.61	.44	.39	.44	.48	.50	.51	.55
.97	.77	.64	.66	.75	.77	.80	.87
.47	.31	.29	.36	.38	.37	.39	.41

Source: Energy Information Administration, Short-term Energy Forecast, November 1986.

Tax, lead phaseout and Stage II headaches loom.

Marketing Investments Get Close to $4 Billion a Year (millions of dollars)



*Figures in parentheses indicate percentage changes from previous year. **Does not include gas pipe lines. ***Includes coal mining by oil companies.

Source: DRI/McGraw-Hill, Inc., Nov. 28, 1986; 33rd Annual Survey of Preliminary Plans for New Plants and Equipment 1986-1988.

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How NCS Hopes to Improve Image, Profits
Why Midwest Jobber Likes Auto Parts Stores
Car Makers, Tax People Batter Gasohol

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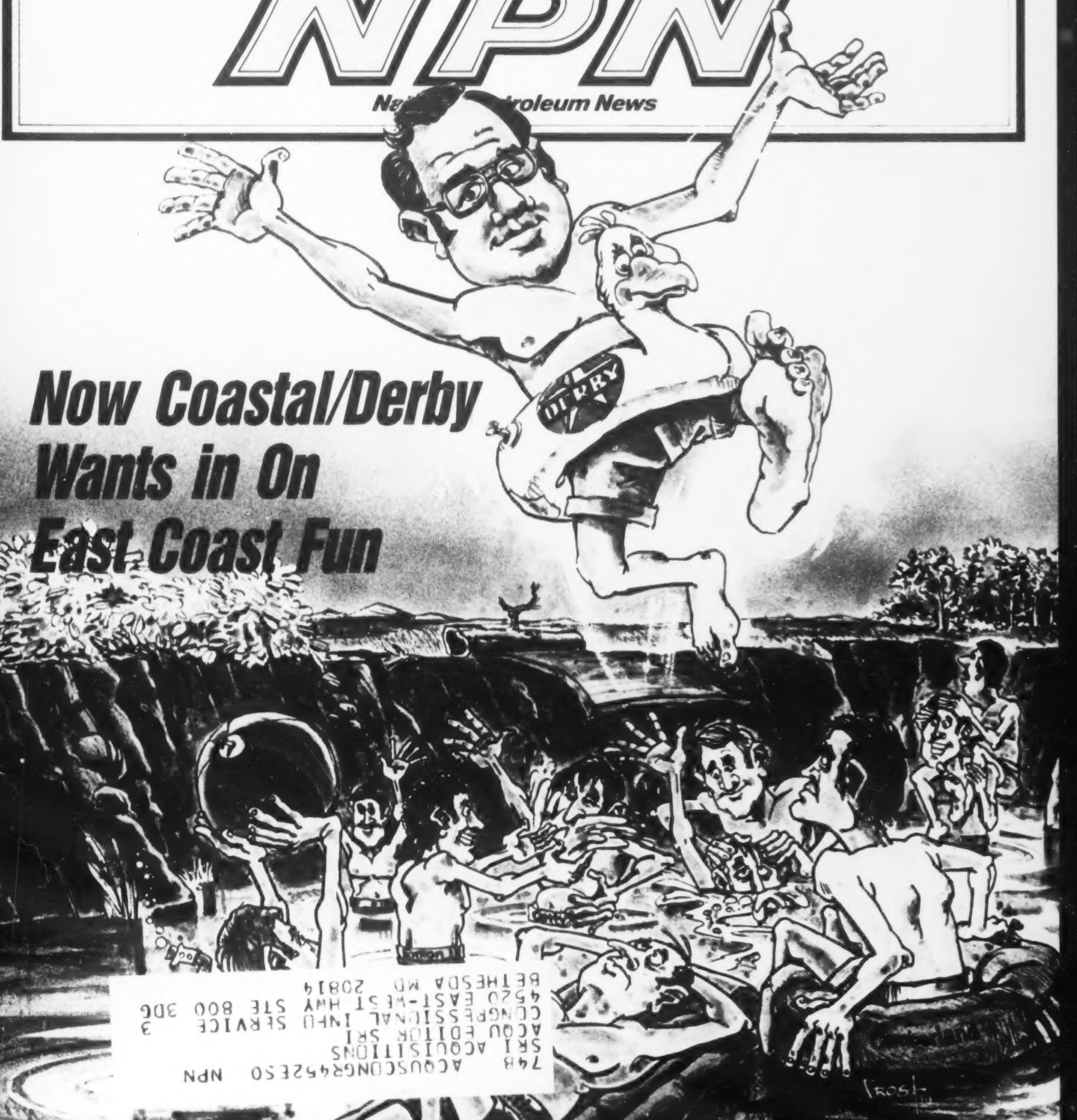

Now Coastal/Derby Wants in On East Coast Fun

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NATIONAL PETROLEUM NEWS

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Jack Pester is an old pro when it comes to innovative gasoline retailing techniques. So what's he doing wearing the Derby brand now that he's sold his marketing operation to giant Coastal Corp.?
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When company earnings take a fivefold plunge over a two-year period, it's time for management to re-examine the way they do business. For NCS, that re-examination resulted in a new store design and a whole new business strategy. **Page 44**

Diversification into general aviation fuels marketing can provide handsome returns for aggressive, well-heeled marketers. Here's a look at how a few have risen to the challenge. **Page 53**

• TRENDS

'National Dialogue' Sought on Oil Imports

The American Petroleum Institute, while maintaining that it has developed no "position on an import fee," has nevertheless launched what is apparently going to be an all-out campaign to get a "national dialogue" going concerning what it describes as "the coming energy crisis."

"In three or four years, the U.S. could be dependent on imports for more than 50% of its petroleum requirements. In 1995, with continued low prices, oil imports could be 11.4 million b/d, accounting for 60% of total consumption," an API briefing paper says.

API says it hopes that "a thorough national dialogue involving Congress, the White House, relevant executive departments, state governors, academicians, the media and others will work to develop a consensus agreement on the nature, extent and immediacy of the problem, as an essential starting point. Progress then can be made toward specifying what government actions might be desirable," the Institute notes.

The national examination of solutions to the problem should look at all possible measures that might be taken, it said, including such actions as "variable import fees, fixed import fees, import quotas, loan guarantees for exploration and production projects, tax or other incentives for exploration and production financed in various ways including gasoline taxes, consumption taxes which would help conservation but not production."

API believes that within "a relatively short time," as few as three to five years, rising American demand alone for imported oil could absorb the Organization of Petroleum Exporting Countries' current surplus production capacity. This would bring back market conditions reminiscent of the traumatic 1970s, it warns.

The *Wall Street Journal*, for one, has editorially voiced strong opposition for what it sees as an industry campaign "to get Uncle Sam back into the business of energy price fixing." It says that since federal price controls were lifted in 1981, the airwaves and public prints "have been mercifully free of such expressions as 'energy crisis' and 'hydrocarbon shortage.' " It blames those federal controls for much of what happened in the 1970s.

Despite such reaction, API says the collapse of crude oil prices in 1986 dealt the domestic oil industry "the worst blow it has suffered in at least half a century," and warns that steps must be taken now to head off another energy crisis.

According to the API briefing paper, the industry suffered a $50 billion annual revenue loss due to the collapse of crude prices in 1986. It estimated, also, that the new tax legislation passed last year will have a $10 billion negative impact on the industry.

With oil prices standing at about half their levels of a year ago, says API, "a number of trends are evident which threaten to bring about conditions reminiscent of the troubled 1970s."

U.S. consumption of petroleum products was up 2.5% in the first 10 months of 1986, it says, "and the rate of growth is accelerating." Domestic production, meanwhile, dropped 300,000 b/d from January to October 1985, and "a drop from 1985 levels of 1 million b/d is forecast within the next 12 months."

Moreover, the API report points out, "exploration for new domestic fields has virtually stopped," due to low oil prices. As a result of all these factors, it adds, "U.S. oil imports have grown during 1986 by more than a million barrels a day."

By 1991, if oil prices remain at their current levels, API says a survey of petroleum producing companies projects that:

- Oil production in the U.S. could fall by 2.7 million b/d from 1985 levels, and natural gas production could decline by the equivalent of nearly 2 million b/d of oil.
- Exploration and production expenditures could be cut by more than one-half, from $70 billion in 1985 to $32.1 billion in 1991.
- The number of wells drilled could decrease by nearly 60%, from nearly 75,000 to a little over 30,000 per year.
- Some 300,000 jobs, almost 20% of all U.S. petroleum jobs, could be lost.

—*Marvin Reid*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

NOVEMBER	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$ .827	$ .762	$ .821	$ .980
Regions:				
Northeast	.845	.773	.821	.974
North Central	.833	.780	.836	.992
South	.811	.738	.801	.972
West	.827	.766	.825	.991

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	1/2/87	1/3/86
Gasoline (total)	238,242	227,760
Gasoline (Unleaded)*	130,700	110,798
Jet Kerosine	42,387	33,777
Distillates	153,326	143,895
Residual	43,346	47,635

**Included in gasoline total.*
Source: American Petroleum Institute.

Service Station Count Drops To Lowest Level in 55 Years

Not since the late 1920s has the U.S. service station population skidded to such a low point. But even though the nose count is down for the 14th consecutive year, the real world out there is far more exciting and enriching for gasoline marketers than at other comparable periods of the past.

Down and Down They Go: Service Station Population Totals Sag Anew in '86 and '87

	1987	1986	1985	% Change '87/86	% Change '86/85
No. of Establishments (a)	117,000	120,150	124,600	(2.6)	(3.6)
Company-owned	21,060	21,627	22,428	(2.6)	(3.6)
Franchisee-owned	95,940	98,523	102,172	(2.6)	(3.6)
Sales of Products and Services (in billions of dollars)	$ 94,907	$ 90,388	$100,767*	5.0	10.3
Company-owned	17,083	16,270	18,138*	5.0	10.3
Franchisee-owned	77,824	74,118	82,629*	5.0	10.3
Average per station	$811,174	$752,293	$808,723*	7.8	(7.3)
No. of Employees	NA	NA	587,352	—	—

* Revised.

(a) As of Dec. 31 of each year; service stations as defined by the U.S. Census Bureau, i.e., those with 50% or more of their revenues being derived from the sale of gasoline and oil products.

Source: "Franchising in the Economy, 1985-87," U.S. Department of Commerce, Finance and Management Industries Division, Andrew Kostecka, published January 1987.

The federal government's "Franchising in the Economy 1986-1988," reports that the service station population had declined to 120,150 units at the end of 1986 and will slip further to 117,000 by the end of this year. This is an erosion of 2.6% between 1987 and 1986, and 3.6% between 1986 and 1985.

Remembering that the peak period—226,500 stations in 1972—isn't really that far into the past, the latest set of figures almost makes it sound as though the service station segment is approaching the point where it will one day vanish from the domestic scene.

Nothing could be further from the truth, however.

First off, it should be noted that the service stations involved in this January 1987 federal report are known as "true service stations," i.e., those that generate more than half of their revenues from gasoline and oil products.

This count does not include the thousands of gasoline-dispensing facilities at convenience stores, mass merchandisers and other such places. If these are added in, the total of places where motorists can buy gasoline would be in the neighborhood of 150,000 to 160,000 outlets.

Nevertheless, this is a near traumatic reduction in the service station population over the past 15 years. Simple mathematics shows that the retail world has been almost cut in half since 1972—117,000 stations at the end of 1987 versus 226,000 on Dec. 31, 1972.

Modern service stations are bigger, better and much more capable of handling the greatly increased number of vehicles, however, as well as generating dollar and gasoline volumes 50 times greater than their Depression Era predecessors.

Here are some comparisons:

- In 1929, the last year in which the population hovered around the 120,000 mark (121,513 to be specific, according to the Centennial reference books published in 1959), gasoline sales totaled 15.5 billion gal.—something like 10,600 gal./month per station.
- In 1986, gasoline sales exceeded an estimated 118 billion gal. Orthodox comparisons on a per station basis are a bit hairy because there were neither C-stores nor mass merchandisers selling gasoline in 1929, as there are today. Industry experts guestimate the current average is about 50,000 gal./month per station, although there are still some 20,000 to 25,000 gal./month stations in rural areas and other isolated places. More significant, however, are the twin facts that some modern stations move 1 million gal./month or more, and the number of 100,000 to 500,000 gal./month stations out there are too many to count these days.
- The depression years of October 1929 through 1933-34 saw gasoline being sold at 15¢ to 16¢ gal. (including taxes) and East Texas crude oil fetching maybe 75¢ bbl. (Yes, 75¢ bbl., not gal.) Gross gasoline sales by the 121,513 service stations of the time were $1.8 billion. That's about $15,000 per station per year.
- By way of comparison, the latest federal estimate says modern service station sales should have hit $90.4 billion last year and should rise to $95 billion this year. Several years ago, when crude ranged up to $35 bbl. and gasoline prices were $1-plus gal., service station grosses topped $110 billion. Even with the depressed pump prices in today's marketplaces, the federal government estimates that U.S. service stations will average $811,174 in sales this year, an increase of 7.8% over 1986.

Some forecasters think the service station population will sink to about 100,000 or so outlets by 1990. This would not be surprising because there are many "small" stations that are finding it difficult to stay alive on the sale of gasoline and services only. Even some of the big pumpers are experiencing that same problem—that survival requires more than volume and 24-hour operations.

The tendency to supplement stations with convenience store facilities—and a host of other services, including car washes, liquor and beer stores, banking, bakeries, fast foods, etc.—is growing evidence of that need.

OPW Wants to
Keep You
in the Black

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March 1987

Three Promotion Ideas That Paid Off
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Is Another Crunch Headed Our Way?

Buyer's Guide Issue

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Is the U.S. barreling down the road to a new supply shortfall, or are some in the industry trying to set the stage for a government-mandated price floor? Marketers' views differ. **Page 40**

Friends
CONVENIENCE STORE

Franchising has become a major force on the American economic landscape. Oil marketers are finding that there are both advantages and disadvantages to franchising their retail outlets. **Page 48**

SPENCER OIL CO

With oil heat losing market share to natural gas in the Midwest, marketers are looking for alternate profit outlets. Rosewell, Mich. Amoco distributor Jim Spencer has doubled volume by attracting commercial business. **Page 54**

• TRENDS

Producers Face Test Of Resolve This Month

March is expected to be the month in which the resolve of the petroleum exporting nations to maintain crude oil prices will be tested. This is when winter demand fades and producing nations have two alternatives: accept the necessity of living with reduced exports or cheat on production quotas to maintain exports.

When the Organization of Petroleum Exporting Countries agreed in December to accept production quotas, and especially when they eliminated netback pricing, crude prices began rising and turned world petroleum buyers and traders into believers. Crude prices rose in December from about $15 bbl. to more than $18 bbl. on the New York futures market and remained in the $18-$19 range into February. A $3.50 bbl. increase is equivalent to more than 8¢ gal. in gasoline prices. OPEC was working toward an average of $18 bbl. for a basket of seven different crudes which had been selling for $13.80 in December. This would be a $4.20 bbl. increase, the equivalent of 10¢ gal.

OPEC's resolve spread to other exporting nations. Significant non-OPEC oil exporters demonstrated their willingness to cut exports in the range of what many OPEC nations were doing, 7% to 9%. Three important ones were the Soviet Union, Mexico, and Norway.

More important, OPEC nations have eliminated netback pricing and non-OPEC exporters have followed suit. The elimination of netback pricing was the public demonstration and acid test of the sincerity of exporting countries to do what they said they meant to do: namely, reduce worldwide crude supply sufficiently to bring it in line with demand [*NPN*—Oct. '86, p16].

For a price increase to stick, producers had to export less, and if they truly meant to, netback pricing would be a pointless giveaway. When production quotas are being observed, fixed prices are the logical way to go.

Netback prices are the ultimate price-war weapon, pegging the price of crude to the price of petroleum products in the marketplace, and therefore providing for a known and profitable refiner margin [*NPN*—June '86, p34]. Refiners are relieved of risk and exporters accept all of it to get the business.

As spring approached, prospects of continued firm prices were not all favorable. There was still too much inventory around the world. With luck, however, and continued belief in OPEC's determination, it appeared that this inventory could be worked off in an orderly way.

If belief in OPEC's resolve wavers, however, and holders of the surplus crude began to see prices weakening, the excess inventories would be dumped on world markets, accelerating falling prices.

This is why events in March are so important. It is the season when belt-tightening must begin among crude exporters. And this belt-tightening is not insignificant. OPEC members as a group have agreed to lop off about 1 of every 12 bbl. of exports this year compared with last. Their combined quota in 1986 was 18.1 million bbl. and they have agreed to limit their sales in the aggregate to 16.6 million bbl. this year—a decrease of 8.3%.

Discounts, barter deals, and other price-cutting mechanisms would be the harbinger of an impending price fall. The return of netback pricing would be the ring of doom from the seller's point of view.

These considerations only apply, it should be pointed out, if the Iran-Iraq war continues unresolved. If Iran wins, it will control 9 million b/d of potential production capacity, which in the aggregate has been running at less than 4 million b/d because of the war. With the ability to withhold this much oil from the world market, Iran would call the tunes, and it has made abundantly clear that it wants much higher prices. There is no practical limit to how high prices could go if a victorious Iran willed it. The $34 bbl. of 1982 could look like a bargain by comparison.

—*Mark Emond*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

DECEMBER	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$ .830	$ .764	$ .823	$ .984
Regions:				
Northeast	.851	.775	.826	.982
North Central	.842	.788	.845	1.003
South	.813	.738	.805	.974
West	.821	.762	.817	.990

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	1/30/87	1/31/86
Gasoline (total)	250,847	236,314
Gasoline (Unleaded)*	140,252	117,997
Jet Kerosine	41,835	34,983
Distillates	142,036	137,510
Residual	41,950	48,657

**Included in gasoline total.*
Source: American Petroleum Institute.

The Way I See It: Warren Rogers

'The Way I See It' is an *NPN* feature where people representing various segments of the oil industry have a forum to address their views on what they see as the key issues affecting the industry. Warren Rogers, president of Warren Rogers Associates, Newport, R.I., is the author of this month's column. Considered to be one of the leading authorities on underground storage tank leakage, Dr. Rogers has served as a consultant to EPA, API and numerous state and regulatory agencies. He holds a degree in mechanical engineering from University of Dublin and a Ph.D. in Mathematical Statistics from Harvard.

Minimizing The Cost Of UST Regs

When tank owners finally get an opportunity to review the underground storage tank standards expected out any time now, it will be obvious that potentially the most costly provision will be the requirement for marketers to have placed into service either cathodically-protected single-walled steel tanks or their fiberglass equivalents within 10 years.

This will require very substantial capital investment by independent operators. EPA's 10-year time frame does allow, however, for a range of investment strategies which can be implemented with careful financial planning.

Our experience with large-scale tank upgrades by major companies has shown that the same end-results can be achieved for a wide range of costs depending upon how the programs are planned and executed. Careful planning and appropriate use of existing technology can reduce some costs as much as three-fourths.

If the only issue facing tank owners involved regulatory compliance, the most cost-effective response would be to defer all action for the maximum allowable period and invest the retained capital at the optimum rate of return. However, if spills should occur, tank owners would have to cope with cleanup and potential liability costs, irrespective of whether they are in compliance.

Based on reliable estimates by industry experts, cleanup costs per leak for the owners of large UST populations would be $157,000. This is a weighted average, however, and should be viewed as a conservative estimate. The table below displays the incidence of various leaks and their associated costs:

Estimated Cleanup Costs

Category	Incidence	Costs
Leakage confined to owners property	85%	$20,000
Migratory leakage but no third-party lawsuits	10%	$150,000
Migratory leakage with third-party lawsuits	5%	$2,500,000

(Expected cleanup cost per leak: 85% of $20,000, plus 10% of $150,000, plus 5% of $2,500,000 equals $157,000.)

The cost-effective program, therefore, is designed to balance costs and risks. The keys to success are these:

- Defer action at any site so long as it can be done safely.
- Target resources on existing or imminent risks.
- Extend the life of tanks at those facilities in which corrosion is not advanced.

Central to the establishment of such a program is the determination of the current and future corrosion status of existing steel tanks. This is a function of the environment surrounding the tank and can be determined accurately by a soil conversation survey. Such a survey establishes the current and future probabilities of leaks for all of the operator's facilities. It serves, therefore, to establish priorities for removal. The age of a tank alone does not determine its condition. Removals, in descending order of age, is among the least cost-effective procedures.

The best method of determining the real costs of a tank management program is to discount the expense of alternative budgets to present day dollars. This approach accounts for the opportunity costs of parting with your money at various times along the prescribed route. For example, if you expect a rate of return on your investment of 12%, then the present value of a $100,000 investment 10 years from now is $30,120. Similarly, by discounting expenses at various times in the future, you can examine budgetary alternatives in light of their costs in present day dollars.

To put this discussion in concrete terms, consider the situation faced by an owner of 100 retail facilities. Based on analyses conducted at 17,000 facilities nationwide, we have established a typical corrosion profile for the steel tanks at such facilities and, on average, the costs of cleanup which will be incurred if no preventive action is taken.

The costs of the various primary methodologies available to support tank management plans are outlined below. Based on national estimates, one can assume that each facility has 3-4 tanks (3.7 tanks/site). The costs are representative of average costs nationwide.

Costs of Alternative Methodologies

Replacement cost (per facility)	$75,000
Precision tank test cost (per tank)	500
Statistical inventory analysis (per tank)	75
Soil corrosion survey (per facility)	800
Cathod. protection install. (per facility)	5,000

Given the probabilities of a leakage over a 10-year horizon and application of both the cleanup and capital costs associated with the development of tank management plans, it is possible to determine the present value costs of alternative strategies. If it is assumed that a tank owner has 100 facilities and the tanks at his sites are representative of steel tanks nationwide, then it is possible to quantify his projected capital expenses as well as his latent exposure.

The simplest, and least likely, strategy for this representative tank owner to take would be no action whatsoever. At the end of 10 years he unloads all of his remaining facilities. Therefore his sole expense is the cost of cleanup which, discounted to present value, would be $7,291,500. This also happens to be one of the most expensive alternatives available and does not reflect his calamitous exposure to liability in the event he is charged with gross negligence.

The most expensive option would be a program of phased replacement in which tanks are replaced in descending order of age. In this case, 55% of the removed tanks are sound and the owner still has cleanup costs because younger tanks leak while older tanks are being replaced. Thus, the tank owner incurs capital expenditures of $4,780,000 to replace tanks and still incurs cleanup costs totalling $3,640,000. The total cost of such a program is thus $8,420,000.

(Continued on Page 32.)

Cost of Regs, Continued . . .

A third alternative, which is one that some state regulations prescribe, is to precision test all tanks annually and replace leakers when found. In this case, the present value cost of precision testing alone is $848,000. Moreover, the owner will incur $2,637,000 in tank replacement costs and still face $637,000 in cleanup costs. Even then, he will face considerable capital expenditures to upgrade or replace those tanks not identified as leakers at the end of 10 years in accordance with the new regulations.

Unfortunately, the common feature of the three approaches described above is that the tank owner is proceeding blindly and is still caught short by having unexpected leaks which cause considerable unbudgeted demands. If he can predict when his tanks will leak, then he can develop a reasonable plan for the phased replacement of his tanks over the EPA's prescribed 10-year period. Moreover, he has the option of protecting his existing good tankage by retrofitting cathodic protection. Most importantly, if he were to implement soil corrosion survey as a leak prediction device at his present sites, then the only cleanup costs would be that from tanks that are presently leaking, and his exposure to liability is eliminated. In this case the cost of corrosion survey at the 100 sites is $80,000 and good tanks can be preserved by retrofitting cathodic protection at the cost of $250,000. Tank replacement costs are reduced to $1,318,000 while the expense of initial cleanup costs and leak detection methodologies is $390,200.

The costs of these various approaches is summarized below. These are generic figures because no two tank populations are alike. However, they are illustrative of the costs of both the EPA's final regulations and the potential for liability that all tank owners face.

Alternative 10-Year Implementation Programs

Plan *	Total Program Cost	Cleanup Cost
No action	$7,290,000	$7,290,000
Replace in descending order of age	8,420,000	3,640,000
Annual precision tank testing; replace leakers when found	4,122,000	637,000
Soil-corrosion survey, retrofit cathodic protection, inventory analysis for leak detection	2,038,000	81,000

**Assumes 100 sites with 3 tanks site*

Outlining these costs highlights the fact that, regardless of the approach the tank owner takes, he still faces considerable capital expenditures over the years. Gasoline retailers should also be aware that any fines levied by any regulatory body will be small compared to the liabilities incurred if they fail to take action and tank leaks ensue.

Exxon Goes ACH on Debit; Stirs Banking Community

Exxon has made waves among banking circles by using the automated clearinghouse (ACH) to process its proprietary debit card transactions. Simply put, it's like taking sidestreets instead of tollways; the ride may take longer, but it's cheaper.

By using ACH, which is itself an electronic network that links between 80% and 90% of the nation's banks, Exxon's proprietary card can access the customer's bank account without the use of other, established bank card networks.

Exxon still uses established automatic teller machine (ATM) networks like MPACT and Pulse cards in Texas, Honor in Florida, Cactus Switch in Arizona and, most recently, Virginia-based Cash Flow. Observers say the company wants to extend the debit convenience to all bank card holders, but wants to build a brand loyalty by offering a combined credit/debit card with the Exxon mark on it.

Financially, the transactions are cheaper, typically, between 15¢ and 20¢ for a regular "on-line" ATM network and under 5¢ for the ACH. Transactions move slower, however. While transactions through the ACH are settled the next day or two at most, an ATM network can process the transaction the same day.

The ACH transaction would be cheaper still if a government stipulation, known as Regulation E, was amended. The rule says that a statement detailing transactions must be mailed to every debit card holder. Exxon as well as other major oil companies, like Amoco, have supported a proposed amendment to that regulation.

Yet while the Exxon's move to ACH processing may be chilling for bank networks, it may mean good news for POS. Though the move would appear to take POS transaction volume away from established networks, other observers believe it will spur banks to act on their POS programs, and heat up the debit card activity at the retail level.

Motor Fuel Tax Increases Considered in 38 States

Thirty-eight state legislatures will consider increases in their own motor fuel taxes this year to raise revenues for highway projects, according to the Highway Users Federation.

In its annual state legislative forecast, the Federation explains that when the 99th Congress failed to reauthorize the Federal-aid Highway Program, federal funds for highway improvement dried-up, deferring planned projects in nearly every state.

At the beginning of the year, state gasoline taxes averaged 13.3¢ gal. in addition to the federal gasoline tax of 9¢ gal., the Federation reports.

Meanwhile, 10 states will consider increases in their gasoline and diesel fuel sales taxes, the Federation says, including Oklahoma, New Mexico and several Midwestern states such as Illinois (See related story Page 24).

State gasohol tax exemptions will be topics in 26 state legislatures this year. Eleven states will consider enacting, extending or increasing the tax exemption, while 15 states will consider repealing, phasing out or decreasing the tax.

Controversy over the transportation of hazardous materials also has lead to a flurry of legislative activity in 42 states, the forecast says. Truck size and weight laws will come up in 19 states and licensing fees will be topics in 30 states.

PMEF Starts New School For Oil-Marketing CEOs

An intensive, four-day seminar designed totally for the top echelon of oil-marketing executives will be held later this month at Key Largo, Fla., under the auspices of Petroleum Marketing Education Foundation, Alexandria, Va. A similar session will be held Oct. 3-8 at a Southern California resort.

Among the many topics on the agenda: business lifecycles, merger/acquisition planning, diversification planning, personal finance and estate planning, personal management, team management and the CEO's Vision. Making It Happen.

The new school is the first of its kind in the PMEF programming. The faculty, PMEF said, is exceptional: George Overstreet, professor of finance at the University of Virginia; John Litt, president of Business Dynamics, Inc., Deerfield, Ill.; William Menke, senior planning advisor, American Management Assn.; and Warren Butler, former Exxon marketing executive who now has his own consulting firm in Woodlands, Tex.

Oil Company Earnings Take It On Chin; U.S. and Foreign Downstreams Shine

Although virtually everyone in the business took it on the chin in the fourth quarter, downstream profits for the full year—especially those made overseas—softened the financial pains for the big oil companies and actually made some of them look good.

Downstream profits for Exxon, for example, were up 127% in 1986; Mobil 292%, Chevron 40%, Texaco 199%, Shell 18%, Amoco 38%, Arco 35%, Standard Oil (formerly Sohio) 24%, Phillips 34% and Sun 57%.

For the three or four oil companies that break out their downstream earnings between foreign and domestic profits, the figures were almost a revelation.

Exxon netted just a shade under $2 billion downstream in 1986, of which 76% ($1.5 billion) came from non-U.S. marketplaces; of Mobil's $1.3 billion downstream net last year, 72% ($928 million) also reflected overseas profits. Similarly, Chevron, which actually showed a minus sign in its domestic downstream earnings in 1986, pretty well made up for its overseas with 70% of its total of $689 million coming from there.

Except for Exxon and Mobil, however, the corporate earnings in 1986 were not all that happy looking. Exxon's corporate net of $5.4 billion was up 10% over 1985, and Mobil's $1.4 billion was up a spanking 35% over the preceding year. All the other big companies had minus signs ranging from 27% for Sun to 54% for Chevron and 61% for Amoco.

The slump in earnings reflected the collapse of crude oil and product prices in 1985 and a wide variety of discounts via tax write-offs, inventory re-evaluations and similar economic reappraisals. These ranged from the millions to the billions, some resulting mostly from hard-headed bookkeeping to coping with heavy indebtedness incurred in better times or mergers, acquisitions and standoffs in take-over activities.

The two biggest earnings losers in 1986 were Standard Oil Co., formerly Sohio, and Amerada Hess Corp. Standard was down $345 million and Hess $219 million.

USX Corp., formerly known as U.S. Steel Corp., said subsidiary Marathon Petroleum Corp. rang up a profit in 1986 but nothing like in 1985. Its operating income in the fourth quarter was $81-million versus $315-million in 1985, and for the full year $73-million compared with $1.3-billion in 1985.

Another significant "loser" in 1986 was petroleum's "Billion Dollar Club," i.e., the listing of oil companies which rack up $1 billion or more in net earnings. It fell from 1985's lineup of six companies to two in 1986—Exxon and Mobil. Those that fell by the wayside were Chevron, Texaco, Shell and Amoco. In bygone years, there have been as many as 10 to 12 oil companies in this billion dollar-plus category. With prices rising again, the "Club" could expand again in 1987.

For most of the companies, the downstreams earnings were the high points of the year just ended. Phillips Chairman C.J. Silas said 1986 was one of the best ever for downstream nets. Shell President John F. Bookout also was on the modestly

(Continued on Page 36.)

Fourth Quarter and Full-year Earnings Reports

(millions of dollars)

Company	4th Qtr. 1986	4th Qtr. 1985	% Chng.	Full Year 1986	Full Year 1985	% Chng.
Exxon	$1,480.0	$1,805.0	(18.0)	$5,360.0	$4,870.0	10.1
Mobil	201.0	425.0	(52.7)	1,405.0	1,040.0	35.1
Chevron	(86.0)	601.0	—	715.0	1,547.0	(53.8)
Texaco	50.0	307.0	(83.7)	725.0	1,230.0	(41.1)
Shell	254.0	652.0	(61.0)	883.0	1,650.0	(46.7)
Amoco	165.0	390.0	(57.7)	747.0	1,953.0	(61.8)
Tenneco	3.0	43.0	(93.0)	(39.0)	(1.0)	—
Arco	64.0	142.0	(54.9)	615.0	(202.0)	—
Standard Oil	31.0	(771.0)	—	(345.0)	308.0	—
Phillips	11.0	95.0	(88.4)	228.0	418.0	(45.5)
Sun	70.0	414.0	(83.1)	385.0	527.0	(26.9)
Unocal	49.2	(134.7)	—	175.8	325.1	(45.9)
Amer. Hess	58.3	(365.8)	—	(219.4)	(260.4)	—
Dia. Sham.	(42.2)	(47.8)	—	(115.6)	(604.7)	—
Ashland (*)	27.2	50.3	(45.9)	—	—	—
Kerr-McGee	8.8	27.6	(68.1)	(291.7)	136.5	—
Pennzoil	46.5	(141.4)	—	45.4	113.9	(59.9)
Murphy	(207.8)	17.1	—	(194.8)	79.7	—
Amer. Fina	5.0	(39.4)	—	(24.6)	(10.2)	—

Downstream: More Sunshine Than Gloom

(millions of dollars)

Exxon (total)	$336.0	488.0	(31.1)	$1,976.0	$872.0	126.6
domestic	17.0	84.0	(79.8)	480.0	229.0	109.6
foreign	319.0	404.0	(21.0)	1,496.0	643.0	132.7
Mobil (total)	254.0	145.0	75.2	1,294.0	333.0	292.1
domestic	65.0	66.0	(1.5)	366.0	157.0	133.1
foreign	189.0	79.0	139.2	928.0	176.0	427.3
Chevron (total)	46.0	175.0	(73.7)	689.0	490.0	40.6
domestic	(128.0)	129.0	—	209.0	321.0	(34.9)
foreign	174.0	46.0	278.3	480.0	169.0	184.0
Texaco						
worldwide	(10.0)	165.0	—	825.0	276.0	198.9
Shell						
domestic	35.0	167.0	(79.0)	319.0	269.0	18.6
Amoco						
worldwide	37.0	59.3	(37.3)	362.0	262.0	38.2
Arco						
domestic	48.0	27.0	77.8	353.0	262.0	34.8
Standard Oil						
domestic	108.0	57.0	89.5	436.0	351.0	24.2
Phillips (total) (**)	75.0	106.0	(29.2)	458.0	342.0	33.9
domestic	72.0	110.0	(34.5)	443.0	327.0	35.5
foreign	3.0	(4.0)	—	15.0	15.0	—
Sun						
domestic	(7.0)	24.0	—	201.0	128.0	57.0
Amer. Hess	37.0	3.2	105.6	N.A.	N.A.	—
Ashland (*)(**)	21.9	54.5	59.8	—	—	—
Kerr-McGee	8.3	9.9	(16.2)	13.2	24.7	(46.6)

(*) Ashland is 1st. Qtr. on both tables; fiscal ends 9/30.
(**) Operating and pre-tax, not net.

Earnings, Continued . . .

cheerful side. He said: "Although we see no indications of a dramatic crude oil price improvement, the worst may be behind us." There were other scattered notes of optimism. Arco's Chairman L.M. Cook noted that crude prices had improved in the waning hours of 1986 and commented: "We believe that the worst may be over and that 1987 results will reflect more fully the benefits of our (Arco's) restructuring." Since many companies restructured in 1985 and 1986, this possibly could be applied to them too.

The problems in 1986 were simply too much crude oil, an excess of products, a collapse of the international pricing structure and a comparable trauma in product prices for all sorts of uses. Perhaps Shell's Bookout summed it up best when he said that as far as his company was concerned, "domestic crude oil prices averaged $11.65 bbl. for the quarter compared with $24.42 for the fourth quarter of 1985, and averaged $13.20 bbl. for the full year, compared with $24.55 for all of 1985."

The shortages in the cash flows precipitated serious problems for many oil companies in 1986. Capital expenditures were halved in many areas, and much talent was lost in the paring of payrolls and the voluntary/involuntary retirement plans that were commonplace. The exploration industry was all but decimated and with U.S. production declining and domestic consumption rising. There were also anxieties that the nation is on a collision course with another major oil crisis in the not-too-distant future (See story on Page 40).

U.S. Supreme Court Mulling Texaco Bond Requirement

In their austere chambers in the nation's capital, the nine justices of the U.S. Supreme Court are debating the fate of Texaco Inc., the nation's fourth ranking oil company.

Specifically, they are debating whether Texaco will have to post a $12 billion bond while it appeals a $10.5 billion verdict won by Pennzoil Corp., or whether the lower courts were proper in intervening and authorizing a much lower figure of $1 billion. Texaco contends that a $12 billion bond would force it into bankruptcy.

A decision is expected by June or July. The High Court normally goes on summer vacation throughout the month of August and it is believed that the Justices will be glad to have disposed of the bitterly contested case by then. Arguments in the suit were pressed in mid-January by Laurence H. Tribe, a Harvard law professor and Constitutional expert representing Pennzoil, and David Boies, of New York, considered one of the sharpest legal minds in the land, representing Texaco.

Questions by some of the justices during the oral arguments poked into the areas of size, equal opportunity and whether federal intervention was proper or improper in what nominally would be a state's rights case but with extraordinary consequences for both sides. The jury verdict itself was the largest in the nation's history.

Bechtel To Manage Refinery Project

Bechtel, Inc. has been named project manager for the 100,000 b/d refinery to be built in Valdez, Alaska, and operated by Alaska Pacific Refining, Inc.

APRI was formed last year to build the high-technology petroleum refinery, which is expected to cost some $750 million and will export refined fuels to Pacific Rim markets [*NPN*—Oct. '86, p28].

The Valdez refinery would be the first built in the U.S. primarily for exporting product, according to the company. It is to be built at the deepwater port terminus of the Alyeska Pipeline.

J. Timothy Campbell, APRI chairman and president, says Bechtel will have "financing participation" in the project with Bank of America serving as financial advisor.

Campbell adds that "major progress" has been made "in arranging for the long-term sale of APRI's refined product," and the company's timetable is exceeding expectations "by a significant margin."

Bechtel, Inc. claims nearly 60 years of experience in the petroleum industry, including the design and construction of more than 150 refineries and petrochemical facilities.

Construction of the Valdez refinery is expected to begin this spring and will include connecting pipelines, dock facilities and a power plant. Employment during construction should reach 1,500 while the refinery's permanent operation staff should be 250 employees, Campbell says.

Arco's 'Paypoint' Pays Off As Carl's Jr. Test Begins

Arco has begun selling the base of 13 million debit cards it built up with its "PayPoint" system. In a test program with fast food chain Carl's Jr., 35 of the restaurants will be linked up to Arco's debit network, originally created to handle debit transactions for the company's am/pm mini-marts and MPG repair shops.

The test will begin in May and will include 35 Carl's Jr. locations in Sacramento and the San Joaquin Valley in California.

What Arco is offering the retailer above and beyond what any single bank or regional network is an expanded card holder base. PayPoint can already access a 9 million card holder base with Interlink. But Arco also has access to about 3 million Star card holders and about 1 million other bank, savings and loan and credit union card holders.

Carl's Jr. is providing their own hardware, which will carry the PayPoint logo, Arco said. "Arco provides the card base and switching capabilities," said a company spokesman.

Carl's Jr. customers will also be able to receive $20 cash when they use their ATM cards, but will be charged 10¢ per transaction to cover processing costs.

"We have been looking into other retail marketing applications for PayPoint," said E.G. Reilly, senior vice president for Arco's marketing and refining division. "This test with Carl's Jr. provides us with an excellent opportunity to try expanding the network outside of the petroleum industry."

Interlink, Honor Boost POS Terminal Numbers

The number of point-of-sale terminals on-line and accepting debit cards has increased by 40% over a six month period, states an industry publication.

In a semi-annual study by *POS News*, an industry newsletter, tallies showed 27,417 terminals on-line in January as compared to 17,256 for June 1986. As a whole, the terminals currently perform four million transactions a month.

The rise in the number of terminals reflects the growth of Interlink, a West Coast network, by 4,000 terminals and Honor, in Florida, by 3,000, the newsletter said.

The number of service stations with POS terminals rose by about 2,000, going from 5,563 in June 1986 to 7,632 in January 1987. Terminals in C-stores doubled with 1,268 in June and 2,702 in January. The rest of the terminals are in supermarkets and "specialty stores," like flower shops and record stores.

POS operators are predicting the total number of terminals to almost double to 65,000 by the end of 1987.

COVER REPORT

Is Another "Energy Crisis" Coming, Or Is Industry Simply Crying Wolf?

"The country today faces a serious energy problem (and) . . . Washington policymakers appear not to understand the full magnitude of the problem."

American Petroleum Institute

"By 1989-1990, I think we'll see a real honest-to-goodness (supply) shortage like we've never seen before."

Bruce McCall
former marketing VP
Conoco Inc.
now a marketing consultant.

"More imports mean more products are available to independents."

Dave Harris
President
Harris Enterprises
Portland, Ore.

"Some people are trying to get crude prices up or get the government to put in a floor."

Herb Richards
West Coast Independent marketer.

Is the U.S. headed toward another energy supply crisis as bad or worse than anything experienced in the 1970s? Or, are some industry people trying to talk up such a possibility to get a government-mandated price floor on crude oil?

The numbers and trends of recent months, which even the naysayers do not dispute, certainly support the Chicken Little voices.

In a nutshell, the figures show that the U.S. is using more oil while the domestic oil industry is producing less and has sharply curtailed its search for new reserves.

Last year, the U.S. consumed 16.2 million b/d of oil while its domestic industry produced 8.7 million b/d of crude and 1.6 million b/d of natural gas liquids which can be processed like crude. This shortfall of 5.9 million b/d in production versus demand will continue to climb, most industry analysts say.

The U.S. is already almost as dependent on foreign oil as it was when the Arab embargo of 1973-74 brought long lines at gasoline pumps and soaring prices. The nation was importing 36% of its requirements at that time. By 1978, when the Iranian Revolution brought on another major supply disruption, 47.7% of the nation's requirements were being imported. This alarming figure subsequently was reduced to 26.5% by the end of 1985. It began creeping up in January and by the end of 1986, crude imports were close to 40% again.

If present crude oil price trends continue, says the American Petroleum Institute, the U.S. will be 50% or more dependent on foreign oil within three to five years. By 1995, the nation may be importing 11.4 million b/d or 60% of its total oil

By Marvin Reid and
J. Richard Shaner,
with staff reports

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requirements, according to the National Petroleum Council.

This puts the U.S. in a very precarious position, warns API, including the possibility that its foreign policies might be dictated by its dependence on foreign oil. It will, in effect, put the U.S. industry and American consumers alike at the mercy and whims of foreign powers, especially those in the Middle East.

Some people, particularly independent gasoline marketers, say API and some producer-oriented trade groups are unnecessarily crying wolf because producers want foreign imports taxed. The independent marketers, by and large, are against any oil import tariffs. They don't see that much risk in being heavily dependent on foreign oil.

Both sides generally agree, though, that the U.S. is rapidly headed toward becoming more dependent on both foreign crude oil and foreign refined products than it was during the supply-short times of the 1970s.

Some sources believe the stage will be set for panic conditions much sooner than API's three-to-five year time frame. Some of these sources think the U.S. will be in a precarious position by next year or 1989 at the latest. There's also the danger that major developments in the Middle East, perhaps an Iranian victory over Iraq, or Soviet intervention in some way, could create panic-button conditions literally overnight.

Why Again?

Considering that it was just seven years ago when the Iranian Revolution brought long lines at U.S. gasoline pumps, it is logical to ask why has the domestic oil industry allowed such an imbalance in supply and demand to occur again.

The collapse in world oil prices last year is the major reason, industry sources say. API estimates that the industry lost $50 billion last year when crude oil prices fell 50% or more. That collapse in prices has caused dramatic cutbacks in exploration and production activity by U.S. oil companies.

Even before the plunge in crude prices, though, the domestic oil industry had been undergoing a traumatic overhaul as companies scrapped marginal operations from the wellhead to their gasoline pumps.

Most of those cutbacks in facilities and personnel were made to reduce operating costs and make the oil companies more competitive in their downstream refinery and marketing operations. It has left the industry in a snug position, though, in refinery capacity and storage.

The domestic industry has scrapped about 150 refineries totaling 2 million b/d capacity since early 1981. It now has about 15.6 million b/d of refining capacity left and this was recently being operated at 82% of capacity.

What all the cutbacks in production and refining capacity means is that the U.S. is now looking overseas not only for an increasing amount of crude oil but also for more and more of its refined oil product requirements. The API noted that the U.S. imported 6 million b/d of refined products during 1986, or about 35% of domestic demand.

If for some reason the foreign flow of oil to the U.S. is cut off, the domestic oil industry will be less capable of meeting the nation's requirements than it was in the 1970s, most industry sources agree. It now has far fewer refineries, storage tanks, people and just about everything else than in 1978-79, when the Iranian fundamentalists chased the Shah from the land and disrupted Middle East import patterns.

"Before, we could do something rapidly" when there was a major supply disruption, says Bruce McCall, one-time marketing vice president of Conoco and now a marketing consultant. "We had the refineries and the storage and the people. We could quickly reroute supply and so forth. But we've lost our logistical system with all the refinery closings and so forth. We will be in real trouble" if another major disruption occurs.

Where We Stand

Here are some of the things that have been happening recently which support those who see oil supply troubles ahead:

- Domestic consumption of oil rose 2.5% the first 10 months of 1986 and has been accelerating, according to API, with motor gasoline demand alone averaging about a 4% increase from the summer months through November.
- Domestic oil production, meanwhile, dropped 300,000 b/d in that same period and API predicts that within the next 12 months, domestic production will drop 1 million b/d below 1985 levels.
- Imports are rising sharply. The U.S. imported 1 million b/d more oil in 1986 than in 1985, according to API, and imports are continuing to soar. This past November, imported oil supplied about 40% of the nation's requirements. The probability is that with U.S. production headed for another slippage of as much as 500,000 b/d this year, imports could rise by an equal amount by the end of 1987. That could increase the import ratio to 42% to 44%.

A few months back, before the Organization of Petroleum Exporting Countries (OPEC) reached a shaky agreement to reduce production, some experts estimated that a surplus of about 150 million bbl. of oil hung over the free world market.

Most experts agree that this surplus is now being worked down. In fact, says API, the rise in American demand for foreign oil alone could absorb much of OPEC's current surplus capacity within three to five years.

API and others are warning that such trends signal an approaching "energy crisis" for the nation, one that could bring back those soaring prices and lines at gasoline pumps of the '70s. Greater dependence on foreign oil might also force the U.S. into foreign policies that otherwise would not be dictated by its interests, says API.

API would like to get a "national dialogue" going involving Congress, the White House, and others to "develop a consensus agreement on the . . . problem" and then search for solutions. The national examination of solutions, says API, could include such things as import fees or quotas and gasoline tax increases.

Independents Reaction

Independent gasoline marketers, in general, do not share the concern that others profess about the danger the U.S. faces in becoming too dependent on foreign oil. For the most part, indies want to continue having easy access to foreign oil supply and are adamantly opposed to such things as tariffs or quotas.

Some independents believe there is still plenty of oil in the free world and sellers of it need big markets like the U.S. As long as these conditions exist, they see no major danger.

Says Herb Richards, a large West Coast independent marketer: "Some people are trying to get crude oil prices up or get the government to put in a floor. I don't think the fact imports may exceed 50% is any threat at all. We have a lot of standby oil and there's too much non-OPEC oil elsewhere in the world to be worried about a possible crisis in the Middle East."

A shortfall would be 'chaos' says one marketer

It is talk about a possible imports fee or similar measure which gets the independent marketers riled up. "We think a free market is the solution to the problems. We are adamantly opposed to government intervention of any sort, be it a floor or a control," says Phillip Chisholm, executive director of Petroleum Marketers Assn. of America.

The Society of Independent Gasoline Marketers of America also opposes import fees or quotas.

Outlook For Marketers

For the domestic marketing industry, what happens this spring, summer and fall and next winter will likely define the situation and make it plain whether fears about the future are justifiably tenable or whether they are merely negative scenarios years away from fulfillment.

Marketers who went through all of the supply panic of the 1970s probably view the possibility of a rerun with mixed emotions. On the one hand, supply shortages invariably mean fat profit margins, but these are of little benefit if the marketer can't get supply.

Some marketers who fared well back in the 1970s have been eagerly awaiting another such period. As some will admit today, there were times back then when they made more money than they ever dreamed of, either legally or illegally.

Today, the situation is different than there was back then. Before the first big crunch in late 1973-74, price controls, allocation formulas and various other regulatory items were already in place, put there by the Nixon Administration in its struggle with trade deficits and economic matters remarkably similar to those besetting the Reagan Administration today.

Some companies are still putting their customers on allocation formulas to solve temporary supply situations but—and this is something that also worries some independents and suppliers alike—there are no federal, state or industry systems or concepts in abeyance to handle, say, a sudden and severe shortfall. The government tried to prepare for such an eventuality some years ago but the whole process died of its own weight.

"It would be chaos," says Bruce McCall, who was Conoco's marketing chief during the often panicky days of the '70s. "Not only is no system set up at the moment, but we've seen a 35-40% attrition of refining and marketing people

The Forecasts: How They Vary on Imports and Production

U.S. Petroleum Consumption

(Millions of b/d)

	1986	1990	1995	2000
Chase Econometrics				
$12 bbl. (1986$)	16.4	18.2	20.3	22.6
$20 bbl. (1986$)	16.3	17.6	19.4	21.4
	Actual 1985	**1990**	**1995**	**2000**
Chevron				
High price scenario	15.7	16.1	16.6	17.0
Conoco				
Base Case	15.7	16.5	17.3	18.2
Data Resources, Inc.				
Base Case	15.7	17.3		
$10 bbl.	15.7	18.4		
DOE/Energy Info. Adm.				
Base Case	15.7	16.1	16.6	
Lower Case	15.7	17.1	18.2	
Nat'l Petro. Council				
Upper Price Trend	15.7	16.3	17.0	17.4
Lower Price Trend	15.7	17.6	19.0	19.9

U.S. Oil Imports

(Millions of b/d)

	Actual 1985	1986	1990	1995	2000
Chase Econometrics					
Low Price Scenario					
Net Imports	4.3	6.0	11.3	—	18.8
% of Consumption	27	37	62	—	83
High Price Scenario	4.3	5.9	8.4	—	16.1
% of Consumption	27	36	48	—	75
Chevron					
High Price Scenario					
Net Imports	4.3	5.9	8.4	—	16.1
% of Consumption	27	—	38	47	53
Conoco					
Base Case					
Net Imports	4.3	—	34	43	56
DOE/Energy Info. Adm.					
Base Case					
Net Imports	4.3	—	5.8	7.8	—
% of Consumption	27	—	36	47	—
Low Price Base					
Net Imports	4.3	—	7.4	11.1	—
% of Consumption	27	—	43	60	—
Nat'l. Petro. Council					
Upper Price Trend					
Net Imports	4.3	—	6.2	7.9	9.1
% of Consumption	27	—	38	47	52
Lower Price Trend					
Net Imports	4.3	—	8.4	11.4	13.6
% of Consumption	17	—	48	60	68

Source: Domestic Petroleum Production and National Security, a Study by the American Petroleum Institute, 12/30/86.

U.S. Oil Production Forecasts

(Millions of b/d)

	Actual 1985	1987	1991	2000
Amer. Petro. Survey				
Price Assumptions (1985$)				
$10 bbl.	8.9	7.1	5.1	—
$15 bbl.	8.9	8.0	6.2	—
$20 bbl.	8.9	8.5	7.5	—
$28 bbl.	8.9	8.9	9.1	—
	1986	**1990**	**1995**	**2000**
Chase Econometrics				
$12 bbl. (1986$)	8.7	5.8	4.3	3.2
$20 bbl. (1986$)	8.7	7.7	7.0	4.5
Chevron				
High Price Scenario	8.8	7.9	6.9	6.2
Low Price Scenario	8.8	6.4	—	—
	Actual 1985	**1990**	**1995**	**2000**
Conoco				
Base Case	8.9	8.0	7.0	6.2
Data Resources, Inc.				
Base Case	8.9	8.1	7.1	6.2
$10 bbl.	8.9	6.9	—	—
DOE/Energy Info. Adm.				
Base Case	8.9	8.1	6.5	—
Lower Case	8.9	7.2	5.0	—
Nat'l. Petro. Council				
Upper Price Trend	8.9	8.0	7.0	6.4
Lower Price Trend	8.9	7.1	5.7	4.5

Source: Domestic Petroleum Production and National Security, a Study by American Petroleum Institute, 12/30/86.

Trends in OPEC and NonOPEC Oil Production(*)

(Millions of b/d)

	Actual 1985	1990	1995	2000
Chevron				
OPEC	16.1	—	—	26.4
NonOPEC	25.6	—	—	20.4
Conoco				
OPEC	16.1	—	—	31.8
NonOPEC	25.6	—	—	18.5
DOE/Energy Info. Adm.				
OPEC	16.1	23.4/24.8	25.3/25.9	—
NonOPEC	25.6	23.8/24.9	21.6/24.0	—
Nat'l. Petro. Council				
Upper Price Trend				
OPEC	16.1	20.6	24.0	27.5
NonOPEC	25.6	24.7	23.9	22.5
Lower Price Trend				
OPEC	16.1	25.8	31.8	37.0
NonOPEC	25.6	22.4	20.4	18.6

(*)NonOPEC excludes USSR, China and other Communist countries.

from the oil companies since then. A lot of experience gained from the last one has been lost."

McCall says if he were a marketer today, "I'd be raising hell with my trade association executive to get a supply allocation system set up. There might not be time to do so after a shortage hits. All kinds of things can occur very quickly" to shut off the foreign oil.

McCall also advises jobbers to make certain they are dealing with "a reputable supplier" who is committed to his market, and to make certain he keeps good records of his product purchases and sales. Jack Malone, a big Tennessee independent, also hammered hard at the importance of recordkeeping. A lot of people got hurt in the '70s in allocations because they didn't have adequate records to support their contentions, he said.

What Happened Last Year

This is what happened in 1986, a year which the president of America Petroleum Institute, Charles J. DiBona, says was the most traumatic in the industry in a half-century or more:

- Crude oil prices plummeted from the $30 to $35 bbl. range to the $8 to $10 level at home and abroad.
- This caused a near-collapse of the domestic exploration industry as capital budgets were halved and drilling rigs were stacked by the thousands.
- The plunge in crude also forced product prices to their lowest levels in years—retail postings as low as 60¢ gal. for gasoline at one point and space heating fuels well under $1 gal. at the height of the season.
- This cut profits and produced cash flows that were so inadequate or so thin that many smaller firms simply folded their tents or succumbed to merger and buyout offers.
- Many marginal producers of crude oil tossed in the towel too, saying $10 to $15 bbl. wasn't enough to keep their stripper wells in operation profitably. Now shut down, these margin wells are now presumed lost forever.
- U.S. production, as one result, dipped 300,000 b/d in 1986—the first such decline since the late '70s. Even more startling, however, is the fact that December production was down some 900,000 b/d from that of the January-February period.

The low prices and the fact that crude and product from the OPEC cartel were flooding the international marketplaces

'(OPEC) can get fat (at $18 bbl.) and we can't drill'

created an anomalous situation for the U.S. industry.

- Consumption of gasoline, for example, rose briskly in response to the 60¢ to 70¢ gal. retail postings. It was up only 2.6% for the year and was running closer to 6% in the waning months of 1986.
- With domestic production down, more and more crude oil and products were imported from overseas. Nominally, they were running at a rate of 6 million b/d for the year but in the last six months of 1986 they topped 6.6 million b/d. Imports from the volatile Persian Gulf area jumped more than 300% in 1986 and accounted for more than half of the total increase in imports in 1986.
- The probability is that imports will keep rising. U.S. production, without a major increase in the price of crude oil—to $25 bbl. or higher, which didn't seem too likely at year's end—to revive it and the flagging exploration segment, can be expected to slip further.
- Imports averaged 34% of demand during 1986 but at year's end, in response to consumption increases, were closer to 40%. That isn't far below the peak year of 1978 when they averaged 44%.

OPEC's Goal?

OPEC has been struggling to regain the world dominance it held in the 1970s. Just before the turn of the year it managed to work out a production quota reduction system that would restrict output and eliminate the global surpluses that have been around for years.

This led to speculative prices of $18 to $19 bbl. for crude oil in late December and early January—the best market prices in a year. But a disconcerting factor was the Soviet announcement in mid-January that it was going to reduce production and exports too to help OPEC achieve its objectives. This, in substance, gave the Soviets a one-up edge in this nation's fragile relations in the Middle East.

It would seem logical that most of the OPEC members, their treasuries depleted and their economies in serious trouble, would raise their prices as quickly and as high as the market would allow. This may not be the case.

Jack Griffith, a Stillwater, Okla., independent and one-time PMAA president, says he has heard talk that OPEC is satisfied to hold crude prices at $18 bbl. for awhile. "They can get fat at that price and we can't drill," says Griffith, who also was an independent wildcatter at one

Pros and Cons:

Some See Crisis Coming, Others Do Not

"Within just a few years, the expected growth in American demand for imported oil alone will absorb enough of OPEC's surplus capacity to jeopardize our security. The tight market conditions of the 1970s will return together with the prospect of significant price increases or sudden shocks to an economy which may then be more highly dependent on foreign oil than it was in the 1970s."

Charles J. DiBona
President
American Petroleum Institute

"We are skeptical. There are all sorts of scenarios and assumptions. Some are being made by people who predicted $50 and up crude oil just a year or so ago. Remember, any government that can put in a price floor can also put in a price ceiling."

P. C. Chisholm
Executive Director
Petroleum Marketers Assn.
of Amer.

"A strong OPEC is a problem and 'gas' lines could come back very quickly. The real problem is that people want cheap gasoline now without thinking about the future."

Jim Morris
President
Morris Oil Co.
Springfield, Mo.

"I used to tell my people and my customers that we wouldn't see another energy shortage. Now I think we will. I'm nervous about the outlook. I hate to think we may have to go through the 1970s all over again but I am afraid we might."

Jack Malone
President, Malone Oil Co.
Memphis, Tenn.

"If OPEC keeps on drying up U.S. production and marginal stuff elsewhere, OPEC will really be in the cat bird's seat within another two or three years. I believe what's being said about being heavily dependent on foreign oil by mid-1988 or shortly thereafter but if a supply shortage hits again, we'll all be in the same boat here at home."

Jack Griffith
President
Jack Griffith Petroleum Products,
Inc.
Stillwater, Okla.

"Increasing imports haven't changed things on the West Coast. The same sources we have been dealing with for a number of years are still there at the same level. For independents, everything hinges on supply and we don't think growing imports will seriously affect domestic supply. That's what independent marketing is all about."

Al Wickland
President
Wickland Oil Co.
Sacramento, Calif.

"I'm concerned but I don't think the supply/demand situation is as serious as some analysts make it out to be. I doubt that we'll see a repeat of the energy crises of the 1970s. We have to be careful about crying 'wolf' about an 'energy crisis' lest the public press blows our statements about our legitimate needs all out of proportion."

William Lyden, Jr.
President
Lyden Oil Co.
Youngstown, Ohio

time. He doubts OPEC will loosen the price screws until it has further bled the U.S. and other high-cost producers. After that, though, watch out.

Competition For Supply

Inasmuch as the U.S. is still the world's leading consumer of oil, it will have to contest with other nations, like Japan, China and Western Europe for Middle East Oil.

A galling factor in the whole situation is that the U.S. simply isn't as prepared as it used to be to cope with shortages and distribution problems.

For example, in recent years it has mothballed or dismantled about 2 million b/d of refinery capacity. What it has left now is running about 85% of capacity which means it hasn't much leeway in processing crude in the face of an exploding demand for product.

Some mothballed capacity can be returned to operation, of course. But the longer a plant is mothballed the more difficult it is to revive it. Time, technology and the facilities themselves are factors which pose difficulties. While not insurmountable, such factors can mean months of delay in reactivating them.

Even more important, however, is the fact that these refineries, many of them small but strategically located throughout the various marketing areas, also had respectable shares of storage capacity—capacity that is now lost to the industry and the consumer alike. This loss is estimated to be about 20% of the old total capacity of about 1 billion bbl.

Too, these smaller refineries could help supply local markets. Since they are no longer available, the question of moving product from the remaining refineries and pipelines isn't as simple as it once was. This would mean that distribution problems inland would multiply quickly and probably precipitate runouts and shortages—both of which could mean gas lines again and zooming prices.

Similar fears are expressed about the availability of seagoing tankers and marine capabilities in general if global demand should explode suddenly. Here too, the declining demand of the early '80s halted construction of new tankers and saw substantial tonnage mothballed like the refineries. Current capacity is down 30% to 40% of what it used to be.

All these things are taking place as the nation's service station population continues its slide to the lowest levels in 50

"Growing imports should be a matter of concern for jobbers. Jobbers are all so sure there's an oversupply that they have a real chance of being blindsided. The problem is exacerbated because urban jobbers can't get the supply contracts they might like. Greater imports are dangerous because supply interruptions could cause great disruptions."

Hal Barstow
President
Barstow Petroleum
Los Angeles

"More imports mean more products are available to independents. The independents traditionally think that, within reason, imports tend to produce greater competition among suppliers, which they see as good, because they are the customers and anything that weakens the suppliers, up to a point, is to some extent good.

Dave Harris
President
Harris Enterprises
Portland, Ore.

"Instead (of an import tax), it looks as though we shall simply wait for the crisis to come, experience the associated rampant inflation and other miseries and look for scapegoats as the political need arises. We apparently have decided, in other words, to deal with the problem just as we did during the early 1970s."

C.B. Hatfield
Professor of Geology
University of Tulsa (Okla.)

"The $18 bbl. price for oil at the beginning of this year is unsustainably low. Over the next 10 years there must be substantial price increases, possibly abrupt, or we will be locked into sharply increased dependence on OPEC, with constant vulnerability to supply interruptions."

Dermot Gately
Professor of Economics
New York University

"The only sure way to counter America's growing dependence on foreign petroleum is through the imposition of a temporary, variable fee on all imported oil, natural gas and petrochemicals. We must reduce our military and economic vulnerability and avoid a repeat of the shortage traumas of the past decade. Otherwise, I'm afraid I'll see you in the gas line in '89."

George P. Mitchell
President
Mitchell Energy Co.
Houston, Tex.

"Where we stand in the chain of distribution it really doesn't make any difference where our oil comes from. As a matter of fact, some foreign products have created a more exciting, competitive atmosphere for us. In the event of a supply crisis, I would think the industry is cohesive enough to solve its supply problems without federal allocation programs but then I don't know."

Tays Cool
President
Cool Fuel
Paramount, Calif.

"As sure as God made little green apples, OPEC will regain its dominance. Over the next five to 10 years, crude oil will hit $30 or more but this doesn't automatically mean a return to 'gas lines' and allocations, as in the '70s. This country's Strategic Petroleum Reserve is enough of an edge to give OPEC pause before considering supply cutoffs. I don't see any massive supply interruptions but there will be higher prices; in fact it'll be more of the same, up and down. We're all playing without full decks, however; no one is really sure what is going on."

Jim Emison
President
Western Petroleum Co.
Eden Prairie, Minn.

years [*NPN*—Feb. '87, p31]. Likewise, the automotive population continues to increase and the automobile makers continue to press the government—and seemingly are within close distance of achieving it—for the elimination of the miles-per-gallon requirements that keep them from bringing back the big engine cars that are generally regarded as 'gas guzzlers.'

Reviewing Options

What can be done to avoid or minimize the oil crisis—if and when it does come?

There are many in the industry who would welcome higher prices for crude and product, so long as supply wasn't jeopardized. This would restore the cash flows that are needed to bail out the commitments that were made when money was more available. It also would restore interest and dollars in exploration, both in this country and in the non-OPEC nations of the world.

At the same time, there is growing controversy in the industry and Washington over the issue of putting a $5 to $10 bbl. tax on oil imports. The big oil companies, the drilling industry, many refineries and others are all for it. Not surprisingly, most marketers are opposed, especially Petroleum Marketers Assn. of America and Society of Independent Gasoline Marketers of America.

It is fast becoming a political issue which will become more controversial as the year goes on. Some in government look at it as a possible lightning rod for the escalating budget and trade deficits of the Reagan Administration.

American Petroleum Institute, the frontrunner in churning out modified alarm signals on the possible dimensions of another crisis situation has been proposing a series of steps for the past several years to head off international supply problems.

"Few people," said API President Charles DiBona recently, "comprehend that today's problems for the industry threaten the security and the economic well-being of the nation tomorrow."

He has called for a wide dialogue over energy policy with the Congress, the Administration, all branches of the industry, academia and the interested public.

A serious problem right now, he said, is that Congress and the federal government have disregarded "the absolutely basic principle that government policies, at the very least, should not further harm the nation's energy production capability."

In traumatic 1986 alone, he said, Superfund legislation and tax reform hit the industry with $14 billion more in funds that could have been used elsewhere.

He urged an end to the Windfall Profits Tax, the complete decontrol of natural gas, the opening of federal lands to exploration and production of vitally needed supplies of oil and gas, and swifter progress in the build up of the Strategic Petroleum Reserve to the level mandated by Congress.

There are pros and cons on all sides.

Marketers, with vivid memories of the nightmares of government controls in the 1970s, want no part of another round of government intervention which some sources say is the only way out of the growing crisis in the oil industry for tomorrow.

At this point, it's a toss of the coin whether crisis times are immediately ahead or some years into the future. There is no reason to believe, however, that it can be stalled off indefinitely.

Federal Oil Allocation: Recalling A Tale of Woe

If another real energy crunch does come in a year or two, as some experts are predicting, the federal government will likely jump in to "help" assure "equitable" allocations of supply as it did in the 1970s.

Many marketers have bitter memories of how "helpful" the feds were the first time around.

The following is a diary kept by a Southeastern marketer in 1979, recording the trials he went through trying to get a supply allocation for a new $200,000 station from the Department of Energy. It was first printed in *NPN* in August, 1979, Page 14:

March 3-12—Prepare Form 17 (required then to get a supply allocation from a refiner).

March 13—Submit Form 17.

March 24—Try to follow up by phone. Nothing learned.

April 2—More phone attempts to followup. Attorney tries also. Contact Congressman's staff in Washington.

April 5—DOE admits it can't find application.

April 6—Air express new application.

April 10—DOE can't find second application. Air express a third application.

April 13—2 p.m. Hear from DOE regional office. Told form improperly completed, but if a revision is rushed, DOE will handle on Monday, April 16. Work feverishly to complete revised form and give to express company by 5:30 p.m.

April 16—No word from DOE.

April 17—Told work on form in process.

April 18—No word.

April 19—Call regional DOE director who says he is ready to approve but jobber should upward certify to regular supplier. Explain already have "willing supplier." DOE man says he will approve if "willing supplier" will agree.

April 20—"Willing supplier" agrees. Call DOE regional director. He is unavailable, does not return call.

April 21—Try to call him again but it's Saturday and no answer.

April 23—8:30 a.m.: Desperate. Call DOE, get case resolution officer who says he has 14 other urgent items and will approve or call this date. 4:10 p.m.: Worried so call him and told it has been approved, will telex tomorrow.

April 24—No word.

April 25—Still no word, but "willing supplier" agrees to release gasoline on verbal authority.

April 26—Pull 100,000 gal. on verbal authority.

May 3—Receive written order for temporary assignment.

May 8—No results yet.

May 24—Still no results. "Willing supplier" tries to reach DOE regional director. At 2 p.m. after two calls told he had gone for the day.

May 29—"Willing supplier" finally reaches DOE regional director who tells him everything is okay and paperwork will be started.

May 30—No results. No verbal release. Call attorney but is out of town. Call DOE regional director; he's out of office today. Ask for subordinate. He's not at desk, will return call. Thirty min. later call again. He's on phone. Hold phone three minutes, operator cuts off. "Willing supplier" calls another DOE case resolution officer who says work is in progress but 14 day notice to affected parties required, and before this happens, we have to submit on a new form! Call Congressman's aide. Call attorney. Call DOE case resolution officer who now says can do without new form. Said it's almost completed and will forward anyway. DOE case resolution officer agrees to send notices TODAY. Completed form air expressed at 5 p.m.

June 1—Waiting.

July 12—Still waiting.

April 1987

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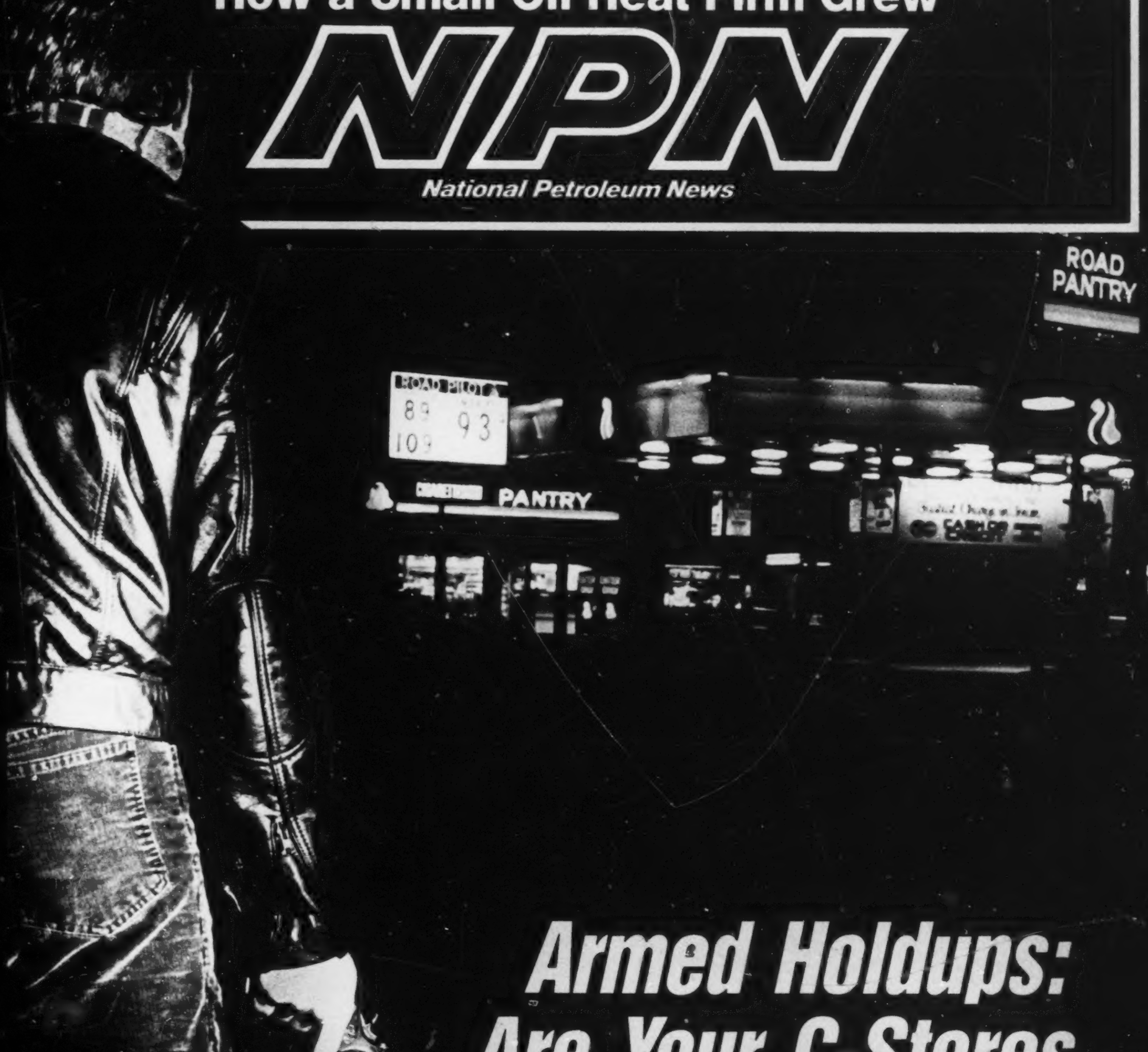
Why C-Stores Are Becoming More Au

NPN Revisits Tough Detroit Market

How a Small Oil Heat Firm Grew

NPN

National Petroleum News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Armed Holdups: Are Your C-Stores Prime Targets?

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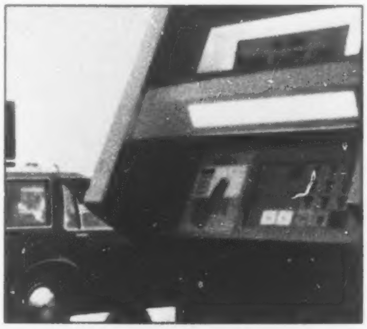
C-Stores are prime robbery targets for many reasons, ranging from late hours to cash on hand. Proper security procedures, however, can sharply reduce the vulnerability of your stores. **Page 38**
Cover photo by Jack Grossman



C-Store operators are ready to upgrade and expand their automated capabilities, according to a recent study. Still, many marketers question the cost-benefit relationship of automation. **Page 44**

WELCOME TO DETROIT
BUCKLAND-VAN WALD INC. OFFICE FURNITURE
PRESTON BURKE GALLERIES, INC FINE ART
430 W LARNED

The rough and tumble Detroit market tests the determination and resourcefulness of marketers. This report tells you what's happening in this predatory market and how marketers survive. **Page 48**

Report Lists Top Crude, Oil Products Importers

Chevron Corp., San Francisco, was the nation's top importer of crude oil and products last year. Northville Industries, Melville, N.Y., was the number one gasoline importer, and Amerada Hess Corp., New York City, the number one distillate and residual importer.

These are some of the highlights of a special report in the December issue of Petroleum Supply Monthly, published in late February by Energy Information Administration. The report also shows that in 1986 the top 10 petroleum importers averaged 3-million b/d in crude and product imports, almost half of the U.S. total, and that the volumes of oil imported by several of the companies increased "significantly" last year, especially Chevron and Texaco, which went up 26% and 33% respectively. It further indicates that Amerada Hess was the largest importer on the East Coast and Koch Industries, Wichita, Kan., the biggest in the Midwest. DuPont (Conoco) was the largest importer in the Rocky Mountain area and Chevron was the largest on the Gulf Coast and the West Coast. Here are the statistics for the top 10 importers, all in thousands of barrels of crude or product per day:

Company	Headquarters	Volume	% of U.S. Total
	CRUDE OIL AND PRODUCT		
Chevron Corp.	San Francisco	519	8.7%
Texaco Inc.	White Plains, N.Y.	456	7.6
Amerada Hess Corp.	New York	274	4.6
Shell Oil Co.	Houston, Tex.	257	4.3
Sun Company	Philadelphia, Pa.	243	4.1
Coastal Corp.	Houston, Tex.	239	4.0
Amoco Corp.	Chicago	231	3.9
Exxon	New York	227	3.8
Koch Industries	Wichita, Kan.	214	3.6
U.S. Steel Corp.*	Pittsburgh, Pa.	208	3.5
Total Top 10		2,868	48.1
Total U.S.		5,968	
*Marathon Petroleum Co.			
	CRUDE OIL ONLY		
Chevron Corp.	San Francisco	500	12.2
Texaco, Inc.	White Plains, N.Y.	416	10.1
Shell Oil Co.	Houston, Tex.	242	5.9
Amoco Corp.	Chicago	219	5.3
U.S. Steel Corp.*	Pittsburgh, Pa.	197	4.8
Exxon Corp.	New York	191	4.6
Sun Company	Philadelphia, Pa.	187	4.5
Koch Industries	Wichita, Kan.	171	4.2
Standard Oil Co.	Cleveland, Ohio	165	4.0
Mobil Oil Corp.	New York	163	4.0
Total top 10		2,451	59.6
Total U.S.		4,111	
* Marathon Petroleum Co.			
	GASOLINE ONLY		
Northville Industries	Melville, N.Y.	33	11.1
Amerada Hess Corp.	New York	29	9.8
Texaco, Inc.	White Plains, N.Y.	18	6.1
Vitol S.A.	Coral Gables, Fla.	17	5.7
Global Petroleum Corp.	Waltham, Mass.	15	5.1
Coastal Corp.	Houston, Tex.	13	4.4
Langham-Hill Petroleum	Charlottesville, Va.	12	4.1
Mobil Oil Corp.	New York	12	4.1
Oxbow Resources	Houston, Tex.	11	3.7
Pacific Resources	Honolulu, Hawaii	11	3.7
Total top 10		171	57.8
Total U.S.		296	
	DISTILLATE FUEL OIL		
Amerada Hess Corp.	New York	40	17.0
Global Petroleum Corp.	Waltham, Mass.	33	14.0
Coastal Corp.	Houston, Tex.	15	6.4
Charter Oil Co.	Jacksonville, Fla.	14	6.0
Northville Industries	Melville, N.Y.	14	6.0
Astroline Pacific	Long Beach, Calif.	10	4.3
Wyatt, Inc.	New Haven, Conn.	9	3.8
Metallgesellschaft Corp.	New York	8	3.4
Vitol S.A.	Coral Gables, Fla.	8	3.4
Pacific Resources	Honolulu, Hawaii	7	3.0
Total top 10		158	67.2
Total U.S.		235	
	RESIDUAL FUEL OIL		
Amerada Hess Corp.	New York	127	19.5
Coastal Corp.	Houston, Tex.	105	16.2
BP North America Petro.	Cleveland, Ohio	41	6.3
Charter Oil Co.	Jacksonville, Fla.	40	6.2
Scallop Petroleum Co.	New York	29	4.5
Sun Oil Inc.	Philadelphia, Pa.	29	4.5
Clarendon Marketing	Stamford, Conn.	22	3.4
Clark Oil Trading Co.	St. Louis, Mo.	22	3.4
Exxon Corp.	New York	18	2.8
Carey Energy Corp.	New York	16	2.5
Total top 10		449	69.1
Total U.S.		650	

Mobil Expands Retail Debit-Card Network

The "Star System," San Diego, a banking network with 6.8 million members, is joining Mobil's retail debit-card network of 2,400 stations in 12 states across the nation. When the Star System goes completely on line this summer, Mobil's point-of-sale debit-card network will be available to more than 32-million customers in New York, Connecticut, Pennsylvania, New Jersey, Virginia, Maryland, Florida, Arizona, California, Oregon and Washington.

In Mobil's system, the terminal at the station is manned by an attendant who passes the customer's debit card through a reader, after which the customer enters his identification number on a keypad. Because the purchase is immediately debited from a customer's bank account, he is entitled to a cash discount, usually about 4¢ gal.

NEFI Acts to Assist Dealer Media Relations

The New England Fuel Institute is on the verge of establishing a regional public relations program to help oil heat dealers respond to media questions. The move results from an internal study by the Institute to determine new courses of action as well as reexamine and redefine those already in operation.

The program is being put together by New England association executives and Christopher Thomas Associates, Long Island, N.Y., an advertising agency which has done work for the Metropolitan Energy Council. The work it does for NEFI, however, will be strictly public relations and involve no advertising.

• TRENDS

Refiners Help Jobbers Upgrade Their Stations

Jobber incentive programs to enhance the image of gasoline stations are spreading fast. A few years ago there were only a a few of these programs, but the idea caught on in 1986 and now most major and independent branded suppliers with substantial jobber business offer incentives. More will probably follow suit.

Although details of individual programs vary widely, the essential fact is that suppliers are spending money to help distributors improve their stations. Expenditures for a supplier can amount to several million dollars a year, and in the aggregate, they are spending many tens of millions of dollars. As a group, jobbers are spending as much or more.

The programs are a boon to jobbers and indicate supplier confidence in jobber marketing. In a period when oil companies have withdrawn from large geographical areas, this support also tells jobbers their suppliers probably plan to stay.

The 14 companies with programs of some kind are: American Petrofina, Amoco, Arco, Atlantic, Conoco, Diamond Shamrock, Exxon, Mobil, Phillips, Shell, Sohio, Sun, Total, and Unocal.

Companies saying they do not have such programs are: Ashland, Champlin, Chevron, Crown Central, Getty, Kerr-McGee, Marathon, Tenneco, and Texaco.

While the basic objective of these programs is to improve station appearance and brand identity, companies go about it differently.

When Arco embarked on its program in 1983, distributors were required to meet image standards. Arco matched distributor expenditures according to certain rules. The program was completed in eight months, with Arco spending several million dollars.

Exxon's program, introduced in 1985, is also mandatory, but requires that the participating station have relatively high volume. A station selling at least 500,000 gal. a year is eligible for up to $3,000 on appearance items.

Other program versions pursue different objectives, such as encouraging gasoline sales increases and influencing contract liftings of gasoline. Most programs are optional, providing gallonage rebates that may be used for prescribed purposes.

Amoco's original program gave a 0.5¢ gal. rebate that could be spent on certain station improvements, retroactive to 1983. On new or razed and rebuilt stations conforming to Amoco's new national image program, the company will give 2¢ gal. on approved volume starting in April.

Mobil gives 0.25¢ gal. on the previous year's volume. Money may be spent on appearance items or on snack shops, marts and express-lubes.

Phillips, which markets only through jobbers, gives higher rebates to larger jobbers. Jobbers selling 3-million gal. or more a year receive 0.2¢ gal. on gasoline, 0.1¢ on diesel. Jobbers selling 1.8 to 3-million gal. a year, receive 0.1¢ gal. on gasoline and 0.05¢ gal. on diesel.

Some companies favor certain kinds of expenditures by varying the percentages they will cover. For example, Phillips' rebates may be spent on the entire cost of canopies and fascia, 75% on driveways and POS terminals, restrooms, and so on, 50% on advertising, and 25% on gasoline promotions.

Favoring new construction, Phillips in its 1987 program gives 1.5¢ gal. rebate for new or razed and rebuilt stations. Unocal rewards consistent purchasing, giving 0.5¢ gal. rebate on 100% of contract volume.

Conoco gives 0.2¢ gal. rebate on 85% of contract volume, 0.4¢ gal. on 100%. However, it assesses a 5¢ gal. penalty on sales over 110%. The company says the penalty is to help distribution planning. Some jobbers think it is to discourage brokering.

Jobbers seem to like the programs. They're putting up a lot of their own money. The result is stronger jobbers with better prospects. *Mark Emond*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

JANUARY	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$ .868	$ .806	$ .862	$1.007
Regions:				
Northeast	.876	.803	.853	.957
North Central	.883	.832	.888	1.022
South	.877	.808	.868	1.015
West	.838	.781	.836	.996

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	2/27/87	2/28/86
Gasoline (total)	252,918	244,592
Gasoline (Unleaded)*	139,789	125,086
Jet Kerosine	41,310	36,139
Distillates	127,101	114,581
Residual	38,036	41,859

**Included in gasoline total.*
Source: American Petroleum Institute.

NPN

NATIONAL PETROLEUM NEWS APRIL 1987

New Forecast:

Only High-Priced Crude Can Save U.S. Oil Independence

A rapid increase in crude prices—to at least $30 bbl. in the short-term and $40 by the turn of the century—appears to be the only possible escape for what many already believe is inevitable—U.S. dependence on foreign oil for more than half of the nation's energy needs in the not-too-distant future.

This is a conclusion that can be drawn from the federal government's latest energy forecasts, long-term and short-term, both of which were issued in late February. But whether rising prices will quell or merely stave off the growing anxieties about another oil crisis in the making is something that only time will tell [*NPN*—Mar. '87, p40].

Here is how the government's latest long-term projection evaluates things:

- If crude prices rise to as much as $33 bbl. by 1995 and $42 bbl. by 2000, U.S. imports of foreign oil can be held to 41% in 1995 and 46% in 2000.
- On the other hand, if crude prices fail to get above $21 bbl. and $27 bbl. by 1995 and 2000 respectively, imports will exceed 55% by 1995 and 64% by the turn of the century.
- The more likely scenario, the government says, is that crude prices will range around $27 bbl. in 1995 and $33 in 2000, putting U.S. dependency at the 50% point in the short term and 56% at the century mark (See Long-Term table above).

These scenarios assume there will be no international upheavals that would dramatically change the supply/demand picture. They are based on the supposition that world oil prices will remain below the $20 bbl. level until 1992, at which time growing demand will have eaten up current excesses and crude prices will begin to rise steadily as a result.

(Continued on following page)

The Long-Term Outlook; Imports to Rise Steadily

(millions of b/d except price forecasts)

	2000	1995	1987	1986	1985
Base projections					
Domestic consumption	17.4	16.5	16.3	16.1	15.7
Liquid oil production*	7.7	8.3	10.4	10.9	11.3
Imports needed	9.8	8.2	5.8	5.3	4.3
% Dependency on imports	56%	50%	36%	33%	27%
*Crude oil and natural gas liquids, U.S. only					
Growth in import factors					
% Increase in imports over preceding period	20%	41%	9%	23%	—
% Increase in 2000 vs:	—	20%	69%	85%	128%
% Increase in 1995 vs:	—	—	41%	55%	91%
Prices					
World oil price	$32.90	$26.60	$16.10	$14.20	$27.70
% Change vs. preceding period	—	24%	65%	13%	(49%)
% Change 2000 vs:	—	24%	104%	132%	19%
% Change 1995 vs:	—	—	65%	87%	(2%)

Source: Energy Information Administration, Short-Term Energy Forecast and Long-term Summary, January 1987, published late February.

EPA Claims Coastal Broke Lead Bank Rules

The U.S. EPA is demanding $1.16 million in civil penalties from Houston-based Coastal Corp., the rapidly expanding independent oil marketer.

The EPA charges that Coastal illegally made about $1.5 million when it violated EPA rules for leaded gasoline sales.

Coastal markets through 20 states under Derby, Joy and Belcher brands. EPA alleges Coastal broke EPA lead banking and lead usage rules, falsely claiming nearly 30 million in lead credits the company hadn't earned. Coastal profited at the rate of 5¢/gram, EPA calculates.

The fine stems from Coastal's imported Mexican gasoline blendstocks, which came in at 82-octane until Coastal added extra lead to bring it up to American standards for leaded regular.

Coastal "based its claim on lead rights on the blend stock, rather than the final product," an EPA official said. He stated Coastal falsely claimed to have gained lead credits according to the EPA standards limiting lead in gas to .1 gram/gal.

The EPA reportedly served notice to Coastal after seizing files from its Houston and Corpus Christi offices.

The EPA has fined Coastal in a "notice of violation," which gives the company a chance to settle the issue out of court. If they don't reach a negotiation, EPA will refer the case to the Justice Department, the EPA official said.

DOE, Patton Oil Reach Settlement

The Department of Energy has reached a final $1.1 million oil pricing settlement with Patton Oil Company, Englewood, Colorado, which produces crude oil in Kansas.

DOE claims Patton overcharged its first sales of crude oil it produced, during June 1979 and April 1980.

Patton, however, admits no wrongdoing as a condition of the settlement with the energy department.

DOE alleges Patton violated federal oil price regulations that are now obsolete. The Reagan administration ended all petroleum pricing and allocation rules in January 1981.

New Crude Forecast, Continued

The likelihood that crude oil prices will move upwards in the immediate future doesn't appear to be very likely, however. In early January, crude oil prices had risen to an almost surprising $18 bbl. level after last summer's disastrous fall to as low as $10 bbl. Within a month they were eroding again and by March 1 they were down to the $16 bbl. area again.

Led by Saudi Arabia, some OPEC members began cutting production as a price-support move and belaboring other members for exceeding their quotas. If the Saudi move is successful, crude prices can move upwards again by mid-summer, but so long as global excesses are big, any recovery unquestionably will be very slow.

The government's mid-range forecast for the long haul anticipates that domestic petroleum demand, estimated at 16.1-million b/d in 1986, will rise to 16.5-million b/d by 1995 and 17.4-million b/d by 2000. U.S. production of crude oil and natural gas liquids, estimated at 10.9-million b/d in 1986, will continue to decline, dropping to 8.3-million b/d by 1995 and 7.7-million b/d by 2000.

The government's Short-Term projection, which it issues quarterly, isn't much different than the last one, which came out just before the end of the year [*NPN*—Jan. '87, p38]. It now foresees a minor decrease in its previous demand projection but a slight improvement in product prices beginning in the second quarter. For example, it now sees gasoline commanding $1 gal. for all grades and services versus the earlier forecast of 97¢ gal. The third quarter is now rated at $1.04 gal., up 2¢ over the December projection and the fourth quarter, up 1¢ gal. Diesel fuel prices are expected to be up 3¢ to 6¢ gal. throughout the year while distillate heating oil should be around 90¢ gal. in the fourth quarter, 3¢ gal. more than had been projected several months ago. The short-term forecast sees distillate retailing at 90¢ gal. in the fourth quarter of this year, compared with 81¢ gal. in the winter season just coming to an end.

The Short-Term Outlook; Not Much Change Ahead:

By the Year

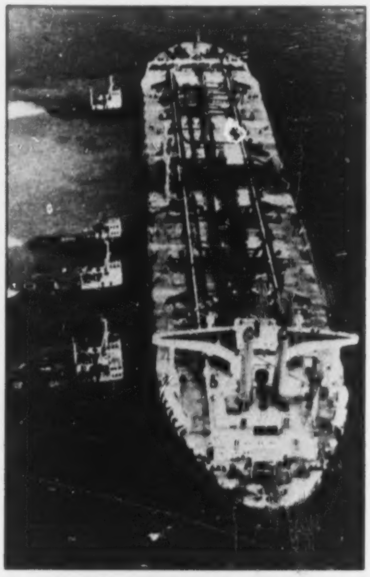
	Projection		History	
	1987	1986	1985	1984
DEMAND (million b/d)				
Motor Gasoline (total)	6.99	7.00	6.83	6.77
Leaded	1.79	2.15	2.43	2.78
Unleaded	5.20	4.85	4.41	3.99
% Unleaded vs. Leaded	74%	69%	65%	59%
Distillate Fuel Oil	2.93	2.90	2.87	2.84
Residual Fuel Oil	1.34	1.41	1.20	1.37
TOTAL U.S.*	16.28	16.13	15.73	15.73
***Includes all oils.**				
PRICES (per gal.)*				
Motor Gasoline**	$ 0.99	$ 0.93	$ 1.20	$ 1.20
No. 2 Diesel	.95	.88	1.15	1.15
No. 2 Heating Oil				
Wholesale	.52	.46	.78	.83
Retail	.85	.78	1.05	1.09
Residual***	.39	.34	.61	.69

By the Quarters

	1987				1986			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
DEMAND (million b/d)								
Motor Gasoline (total)	6.67	7.16	7.13	6.99	6.64	7.09	7.27	7.27
Leaded	1.83	1.88	1.78	1.66	2.15	2.27	2.22	1.98
Unleaded	4.84	[illegible]	5.34	5.33	4.49	4.82	5.06	5.03
% Unleaded vs. Leaded	73%	74%	75%	76%	68%	68%	70%	69%
Distillate Fuel Oil	3.20	2.74	2.66	3.10	3.28	2.73	2.57	3.01
Residual Fuel Oil	1.48	1.30	1.23	1.33	1.42	1.34	1.43	1.43
TOTAL U.S.*	16.31	16.06	16.24	16.50	16.06	15.86	16.18	16.43
***Includes all oils.**								
PRICES (per gal.)*								
Motor Gasoline**	$ 0.90	$ 1.00	$ 1.04	$ 1.03	$ 1.10	$ 0.93	$ 0.87	$ 0.83
No. 2 Diesel	.90	.95	.97	.99	1.04	.87	.80	.81
No. 2 Heating Oil								
Wholesale	.51	.50	.51	.54	.61	.64	.39	.42
Retail	.81	.83	.84	.90	.97	.77	.67	.70
Residual***	.37	.38	.39	.42	.47	.31	.27	.31

*All prices include taxes except No. 2 heating oil; **Average price for all grades and services; ***Average price for all grades of sulfur.

Source: Energy Information Administration, Short-Term Energy Forecast, January 1987, published late February.



If crude prices don't rise, this will be a familiar sight in U.S. harbors.

May 1987 $5.00

Shell Grabs Top Spot in Market S

Why an Arkansas Jobber Likes Cardlocks

Marine Engines: Headache or Opportunity?

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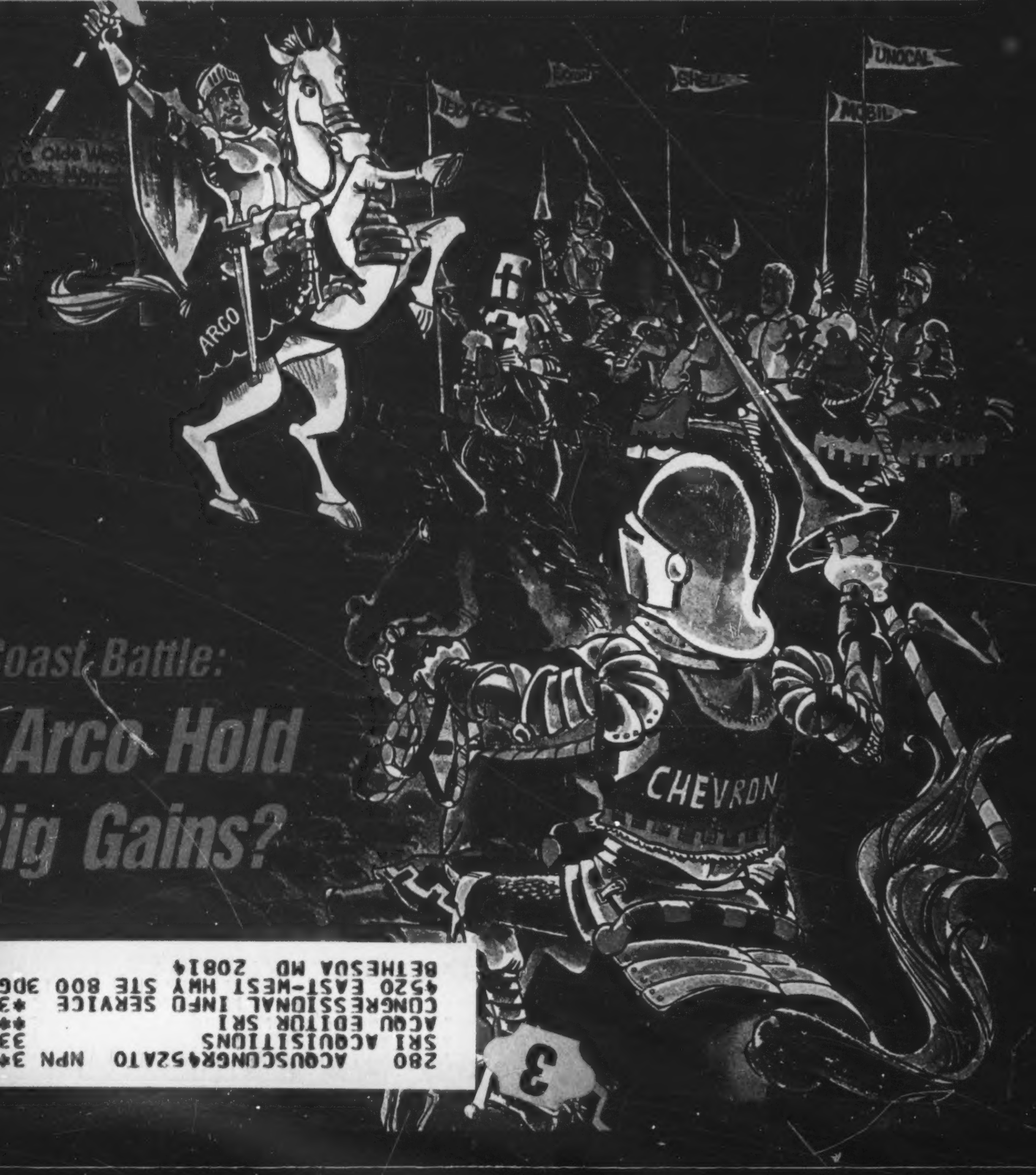
National Petroleum News


Ye Olde West Coast Market
TEXACO
EXXON
SHELL
UNOCAL
MOBIL
ARCO
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West Coast Battle:

Can Arco Hold Its Big Gains?

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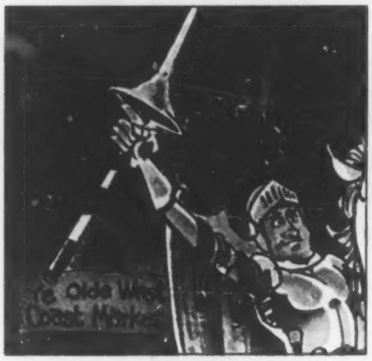
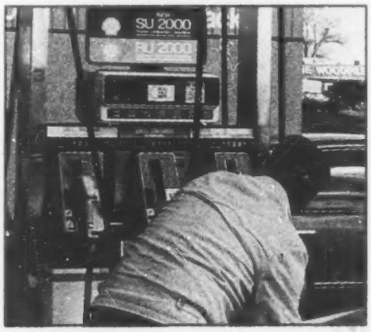


Arco's cash-only, low-price, high-volume marketing strategy has taken the West Coast gasoline market by storm. Now, major competitors are making moves to recapture market position lost to the region's most aggressive marketer. **Page 34**



Arco may be king of the castle on the Coast, but Shell has taken over as top gun in terms of national market share in gasoline sales. The company's service stations increased sales 11% in 1986, the best percentage increase among major companies. **Page 29**

The EPA-mandated lead phasedown presents both opportunity and potential liability problems for marketers who sell gasoline for marine engines and high rpm farm equipment. Some marketers see a growing opportunity in the sale of lead substitutes to offset unleaded problems for those types of engines. **Page 48**

• TRENDS

Oil Men Mustn't Ignore Energy Crisis Threat

History often repeats itself and may be on the verge of another go 'round for U.S. oil men. As frightening as the prospects of a third global oil crisis [*NPN*—March '86, p40], is the apathy among marketers about it. They seem to have a head-in-the-sand attitude that there's really no need to worry because of plentiful supplies of standby and alternate sources of oil, some of which weren't available during the last crunch in 1978.

Some marketers and association executives apparently believe OPEC has been counterbalanced by new and additional sources of supply in the North Sea, the Orient and the Western Hemisphere itself. This line of thinking also suggests that with production on the downside in the U.S., all we need do is open the spigot and this lost production just gushes forth presto-chango. A realistic viewpoint is that only $25 bbl. oil, which doesn't seem likely at this time, can reactivate exploration and production in U.S. oil fields and even then it will take several years to rebend the curve upward. If marketer apathy persists, the oil crisis can happen earlier and with much greater impact than already forecast.

Most major suppliers and the federal government are deeply concerned about another round of oil and price traumas in the early 1990s. And they're trying to get people to recognize it and at least start talking about potential solutions, no matter whose ox is gored. The latest DOE report wasn't simply another bureaucratic outburst; it was a distillation of input from a dozen federal agencies and 250 outside experts.

Facts simply do not support the notion that excess and potential supplies for the future are really very strong or quickly available. Consider these points:

1. In 1986, imports of crude and products moved upward for the first time since 1981. Almost half of these—46% to be specific—came from OPEC members. OPEC is composed of 12 nations—six Arab, six non-Arab. In 1986, the Arab segment shipped an average of 1,149,000 b/d to the U.S. and non-Arab members shipped 1,619,000 b/d for a total of 2,768,000 b/d.

2. The 54% imported by the U.S. from other nations amounted to 3,293,000 b/d. What few people realize is that the 54% came from more than 50 assorted nations—including the Soviet Union and some of its satellites. Some of these nations contributed only teacups full but they were nevertheless parts of the group that some marketers consider significant. The ratios are even more compelling: OPEC owns about 75% of the world's proved reserves of oil, the U.S. and its allies 25%.

3. The biggest exporters to the U.S. in 1986 were Canada, 790,000 b/d; Venezuela, 772,000 b/d; Mexico, 694,000 b/d; United Kingdom, 351,000 b/d; and the Virgin Islands, 243,000 b/d. But Venezuela is a member of OPEC and Mexico, while not a member, is often sympathetic to its causes and sometimes attends critical price and supply meetings as an "observer." The Virgin Islands is a U.S. territory and its role as an "exporter" is more technical than realistic.

4. All of the exporters can be counted on to increase oil and products to the U.S. as demand continues to rise in the face of excesses and cheap prices. But there are limitations on the production capabilities of the OPEC and non-OPEC sources alike. Remember that Saudi Arabia alone has almost 25% of the world's oil reserves while the combined reserves of Venezuela, Canada, Mexico, U.K., and the U.S. equal roughly 18%. If there's another crunch, many countries will be vying with the U.S. for more oil supplies.

5. Budget cutbacks have slowed the input to the Strategic Petroleum Reserve to a trickle. It now has slightly more than 500 million bbl., far from the 750 million bbl. it was to have had several years ago.

The oil industry, government and the American people must face facts and work to find solutions to this looming threat. *—J. Richard Shaner*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

FEBRUARY	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$ .911	$ .848	$ .905	$1.047
Regions:				
Northeast	.912	.839	.887	1.034
North Central	.895	.843	.899	1.042
South	.914	.847	.906	1.044
West	.921	.859	.923	1.074

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	3/27/87	3/28/86
Gasoline (total)	245,801	225,468
Gasoline (Unleaded)*	136,960	116,053
Jet Kerosine	41,903	38,898
Distillates	106,308	95,143
Residual	38,224	39,387

**Included in gasoline total.*
Source: American Petroleum Institute.

By J. Richard Shaner

EAST COAST

Fuel Oil Bounces Back In Northeast Housing

Not since 1979 has the distillate heating oil industry done as well in new home construction in the Northeast as it did in the year just gone by.

Preliminary figures from the U.S. Department of Commerce indicate that fuel oil got 24% of the new homes that were built in that area in 1986.

That's an increase of 8% in the annual total, which has been bumping along discouragingly at 13% to 16% in recent years. In 1979, the heating oil industry commanded 36% of the new homes in the northeast.

It's obvious that the fuel oil industry still has a long way to go to get back to where it used to be, but at least the figures indicate a turnaround is in the making, one observer noted.

The national figures were on the upside for heating oil too. The preliminary data indicate that fuel oil's share of the total U.S. new home market was 5%. Not much, in one sense, but considering that the national level has been running only 1% to 2% in recent years, the 5% doesn't look bad at all.

The Commerce Department report, which will come out in final form in another month or two, said 1.1-million new homes were constructed in the U.S. in 1986. Two-thirds of them will be built in the South and West which, because of its limited space-heating requirements, do not offer much market penetration potential for fuel oil vis-a-vis its traditional gas and electric utility competitors (See data in adjacent box).

Fuel oil marketers said last year's depressed prices helped the industry's competitive position with gas and, especially, electricity. As an example, the Maine Oil Dealers Assn. noted that conversions of electrically heated homes to fuel oil "are going stronger than ever, up between 12% and 18% over previous years depending upon the region" in question.

The New England Fuel Institute also noted some time ago that its continuing promotional and educational efforts, as well as a more competitively priced product, enabled its members to staunch the flow of conversions from oil to gas; in effect, to have fought the utilities almost to a standstill.

Construction Report Boosts Oil Heat

For an industry segment that has been lagging badly in the new home construction market in recent years, fuel oil got an important picker-upper in 1986, preliminary data from the Commerce Department says. In the Northeast, oil heat got 24% of the new homes last year, up 8% from 1985. For the nation as a whole, fuel oil got 5% in 1986 compared with 3% the preceding year and 1% to 2% in earlier periods. Here's the breakdown:

Region	New Homes Completed (Add 000)	Share of New Homes by Fuels and Percentages Gas	Electric	Oil	Other
Northeast	193	41%	31%	24%	4%
Midwest (a)	170	78	17	(*)	4
South	502	30	66	(*)	3
West	253	64	29	(*)	7
Total 1986	1,118	47%	44%	5%	4%
Total 1985	1,072	44%	49%	3%	4%

(a) Formerly called "North Central;" (*) Statistical data did not meet publication standards.

Source: U.S. Department of Commerce, 1986 construction reports, preliminary data released in March, 1987.

Shell bumps Amoco and Sun on Jersey Turnpike

Shell outbid Amoco and Sunoco for 13 stations on the New Jersey Turnpike, which runs from the New York State line to the little resort-fishing center of Cape May.

The New Jersey Turnpike Authority announced the awarding of the bid and the changing of the guard as of April 1 but did not release volume or price details. It is understood, however, that all of the stations are in the high volume range.

The package cannot help but enhance Shell's position as the nation's No. 1 marketer of gasoline, a title it won in 1986.

The stations are basically independents, so this will be a branded supply operation. Shell said its own basic credit and Signature Cards will be honored at all of the stations as well as MasterCard and Visa.

Puerto Rico subsidiary is up for sale again

Chevron Corp. says Carey Energy Corp., New York-based trader and marketer, missed its closing date for its planned purchase of Chevron's Caribbean Gulf Refining Corp. subsidiary in Puerto Rico and that other options are now being explored.

Carey signed an agreement with the San Francisco company to pay $100-million for 100% of the Puerto Rico unit which owns a 38,000 b/d refinery at Bayamon and markets products through 275 branded stations on the island. Chevron indicated it's still interested in disposing of the package down there and is discussing other alternatives in addition to continuing talk with Carey.

NPN

NATIONAL PETROLEUM NEWS MAY 1987

Shell Flies High As Leading U.S. Gasoline Marketer

Dwarfed by Exxon and outranked by Chevron, Mobil and Texaco in physical assets and service stations, Shell Oil Co. nevertheless became the nation's No. 1 marketer of gasoline in 1986.

Shell, with a 20.4% increase in volume last year, vaulted over Chevron, Texaco and Exxon—in that order—in finally nailing down a title that had been sort of a will-of-the-wisp challenge through the years. It ranked fourth last year but had been as high as second in prior years.

Probably the biggest single factor enabling Shell to fly so high in 1986 was its acquisition of 400 service stations in the Northeast from Arco during that company's withdrawal from eastern marketplaces. Virtually all of the stations were big volume outlets in prime locations.

Shell said its service stations enjoyed an 11% increase in sales in 1986, the best performance record of any of the top companies in that period. The next biggest percentage increase was Mobil's, with 9.9%. But Mobil's included both service station and other sales so this is not necessarily a quid pro quo comparison.

Cigarettes · So
SU 2000
RU 2000

Pump islands at Shell service stations were busier than ever in 1986 as the company moved to the head of the parade in U.S. gasoline market share.

There were two other significant changes in the line-up of the top 15 gasoline marketing companies: Standard Oil Co., formerly Sohio, moved up one notch, passing fading Arco in the process, and Marathon was added to the top 15 for the first time.

In bygone years, Marathon had been reluctant to disclose its gasoline volumes so it was hard to get a good fix on where it stood nationally. Now, however, Marathon is ranked ninth based on its sales of more than 4-billion gal. of gasoline in 1986. It also inserts Marathon ahead of Unocal, Sun and Phillips in gasoline marketing importance.

In taking over first place, Shell bumped Chevron, which held the lead since its late 1983 acquisition of the old Gulf Oil Corp. At that time, Chevron made an equally spectacular leap upwards, going from fifth to first in one fell swoop.

What hurt Chevron in 1986 was that it had shed 4,000 stations in the Southeast in late 1985 and about 3,000 more in the Northeast in early 1986. The southeastern stations were divested as a result of a court order in the Gulf merger and the northeastern stations were a withdrawal from a marketplace where it had only marginal interests.

The southeastern stations were sold to Standard Oil and those in the northeast to Cumberland Farms, Canton, Mass., the big C-store chain.

Chevron's gasoline volume in 1986 declined 3.3%. It and Phillips Petroleum, which reported a 1.2% decrease, were the only two "losers" last year.

The net result of the Shell ascendency, however, is that Chevron became No. 2, Texaco No. 3 and Exxon No. 4 (See related table on Page 31).

Dallas-based Southland Corp. was added to the list of 15 this year because even though it's nominally a C-store chain it also is a major gasoline marketer. Moreover, it has its own refinery in Lake Charles, La., a 100,000 b/d facility that is operating at almost full speed. Southland's volume in 1986 was a little over 2-billion gal.

The two biggest "pure" gasoline marketers—that is, those without refining facilities of their own—are Cumberland Farms and Getty Petroleum Corp. Cumberland noted that it had obtained control of the former Chevron-Gulf properties in mid-1986, thus it did not have a full year of operations under its belt by Dec. 31. A spokesman indicated, however, that earlier this year it was moving about 1.7-billion gal./year. That's rather surprising because Cumberland previously had been credited with about 2.5-billion gal./year.

Getty reluctantly refused to reveal its gasoline volume in 1986 so here again it was difficult to give it a proper ranking. However, the last estimates were that Getty was moving about 1.25-billion gal. of gasoline in its 11-state market area.

Cumberland, while not owning and/or operating a refinery, is about as close to it as a company could be without the formalities. Cumberland has a contract arrangement with Newfoundland Refining, Inc., under which the old Canadian refinery will be put back on stream later this summer. It is owned by an independent investor group but Cumberland is handling the crude oil purchases and has committed

(Continued on page 30)

Retail Market Shares, Continued . . .

The 1986 Gasoline Market by Gross Gallonage and Relative Shares

1986 Volume = 109,105,160,000 gal. (a)
1985 Volume = 108,876,519,000 gal. (b)

	Rank		Share of Natl. Mkt.		Volume (Add 000 gal.)		
Company	**1986**	**1985**	**1986**	**1985**	**1986**	**1985**	**% Chng. '86 vs. '85**
Shell	1	4	8.711%	7.251%	9,504,600	7,894,500	20.4%
Chevron	2	1	8.396	8.702	9,160,020	9,473,940	(3.3)
Texaco	3	2	8.009	7.885	8,738,100	8,584,800	1.8
Exxon	4	3	7.714	7.589	8,416,170	8,262,870	1.9
Amoco	5	5	7.348	7.181	8,017,590	7,818,300	2.6
Mobil	6	6	6.716	6.125	7,327,740	6,668,500	9.9
Standard	7	8	5.019	4.914	5,475,480	5,350,170	3.7
Arco	8	7	4.609	4.266	5,028,210	4,644,990	8.3
Marathon	9	9	4.047	3.830	4,415,040	4,169,760	5.9
Unocal	10	11	3.653	3.421	3,985,800	3,725,190	7.0
Sun	11	10	3.442	3.450	3,755,850	3,648,540	2.9
Phillips	12	12	3.414	3.365	3,725,190	3,663,870	(1.2)
Conoco	13	13	2.740	2.647	2,989,350	2,882,040	3.7
Southland	14	14	1.879	1.819	2,050,000	1,980,000	3.5
Getty	15	15	1.096	1.014	1,195,740	1,103,760	8.3
Total (c)	—	—	**76.8%**	**73.1%**	**83,784,880**	**79,571,230**	**5.3%**

(a) Estimated on the basis of Federal Highway Administration data for 1985 consumption, plus 2.1% reflecting 1986 increases.

(b) Federal Highway Administration consumption data for 1985.

(c) Specific data on Cumberland Farms, which has been regarded as the nation's biggest independent retailer, are not available because the firm did not acquire control of its Chevron/Gulf purchases until mid-1986; hence data for a full year are not available. Estimates, however, indicate Cumberland is retailing about 1.7-billion gal./year. Because the Cumberland figure is inconclusive, it is not included in the industry total in the final line above.

Sources: Federal Highway Administration as well as 1986 annual reports on gasoline sales volumes. Some companies concede, however, that the volumes include varying amounts of other products, such as avgas and naphtha. Thus these figures are more of a trend than a specific.

itself to buying all of the product—about 100,000 b/d—for its American marketplaces. [*NPN*—Apr. '87, p22]. Thus, it controls all of the needle except the eye, so to speak.

The gasoline volumes in this evaluation are those reported by the oil companies in their annual reports and ancillary financial statements. The volumes are total sales, not just those designed for highway use. They can, consequently, include highway use, inter-refinery sales and other distribution procedures. Also, some companies say the gasoline totals may include small amounts of related products such as avgas and naphtha. Federal Highway Administration highway consumption data for 1985 and 1986 are used as a roundhouse estimate of this marketplace as a basis for comparisons.

Exxon is the nation's biggest oil company, with $69.1-billion in assets. Mobil is second with $41.8-billion, then Chevron with $38.9-billion, Texaco with $37.7-billion and Shell with $26.5-billion, just a step ahead of Amoco with $25.2-billion.

In the number of service stations, the last available figures credited Texaco with 18,718, Exxon with 17,427, Chevron with 16,645, Mobil with 13,310 and Shell with 11,129. There were many changes in 1986, however, so these totals will probably vary up or down when the late 1986 numbers become available this spring.

Chevron Leads in Refined Products But Gasoline Ratio is Lowest

Chevron sold more refined petroleum products in 1986 than any other major oil company but its ratio of gasoline sales was at the other end of the spectrum as well.

Most of the companies ranged relatively close to a 50/50 sales ratio between refined products and gasoline. Refined products normally include light and heavy fuel oils, lubricants, asphalts, etc.

Chevron marketed 23.7-billion gal. of refined products in 1986, down 8.1% from 1985 but still far ahead of second-place Texaco which sold 18.8-billion gal. over the same time frame, up 6.1% over the preceding year.

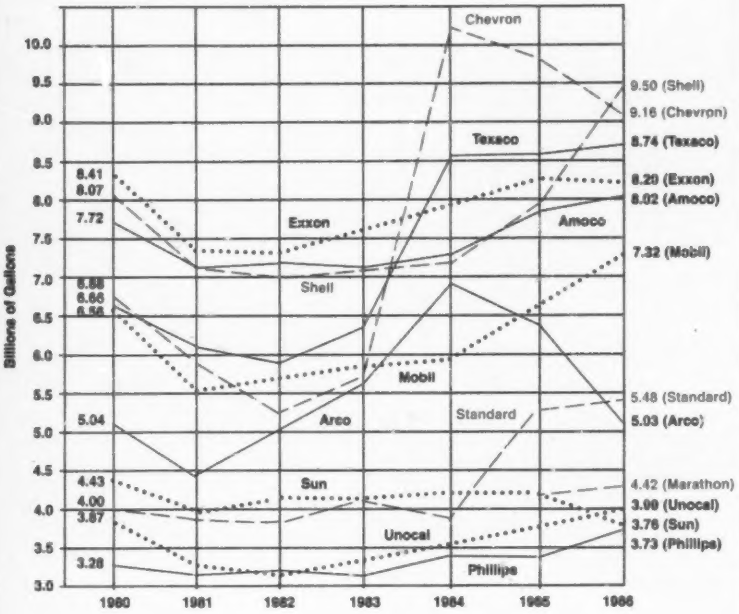
Chevron's gasoline ratio was only 39% while Texaco's was 47%. The highest gasoline ratio was Unocal's, which was 59%. Shell, which ranked first in gasoline sales in 1986, had a ratio of 53% in gasoline sales to total refined products. Shell also had a spectacular increase in total product sales, 23% over 1985.

Here's a boxscore of the 1986 ratios with an additional factor ranking the top 12 companies in the value of the assets they own and use in their operations:

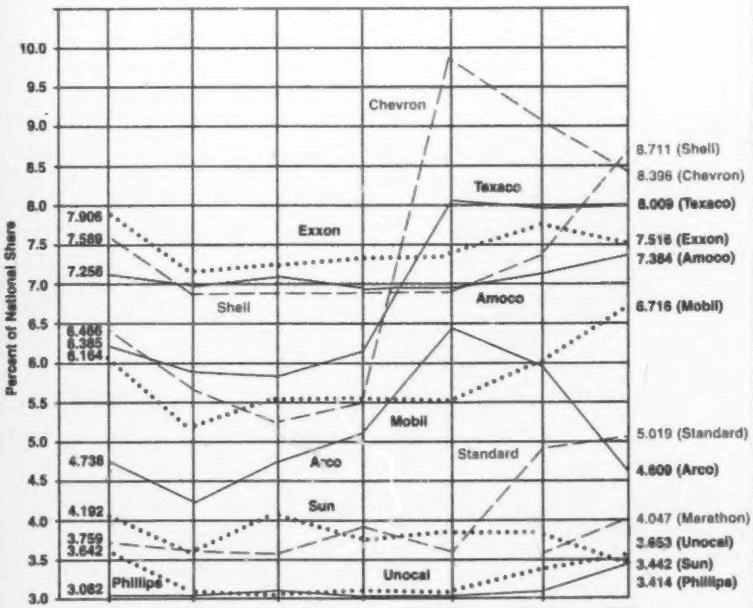
Ranking in Assets	Company	Refined Product Sales 1986	Refined Product Sales 1985	% Chng.	% Gasoline
3	Chevron	23,715,510	25,800,390	(3.1%)	38.6%
4	Texaco	18,809,960	17,721,480	6.1	46.5
5	Shell	17,982,090	14,609,490	23.1	52.9
1	Exxon	16,954,980	17,215,590	(1.5)	48.7
6	Amoco	14,348,880	13,966,630	2.7	55.9
2	Mobil	12,892,530	12,095,370	6.6	56.8
7	Arco	10,163,790	9,519,930	6.8	49.5
8	Standard	9,887,850	9,259,320	6.8	55.2
10	Sun	8,278,201	8,109,570	2.1	45.4
12	Marathon	7,894,950	7,220,430	9.3	55.9
9	Phillips	7,864,290	8,094,240	(2.8)	47.4
11	Unocal	6,775,860	6,438,600	5.2	58.8

THE BIG PICTURE

In Billions of Gallons



By Market Shares



Alcohol Blends Gaining Support in Washington

Alcohol fuel producers could soon have their greatest growth period in history as officials on Capitol Hill and in the Reagan administration look at ethanol and methanol as a way of curbing air pollution—and U.S. dependence on foreign oil—while at the same time helping the nation's corn growers.

Vice President George Bush recently proposed using ethanol in all gasoline sold in parts of the U.S. "that violates carbon monoxide pollution limits [*NPN*—April '86, p11]." Metropolitan areas in New York, New Jersey, Massachusetts, and Colorado are among 88 urban areas not in compliance with air quality standards issued by the Environmental Protection Agency (EPA).

"Instead of storing crops and taking federal payments," Bush said corn growers "could sell them to the energy companies that would spring up," as well as to existing ethanol producers.

Eric Vaughn of the Renewable Fuels Assn. regards the Bush proposal as a "boost" for ethanol producers. He says, "Bush's statement may signal a change in the Reagan administration," which has not supported efforts to require alcohol fuels.

Vaughn says the increased use of ethanol and methanol in the U.S. is inevitable.

"Cities are choking," he says. "There may be EPA sanctions on 88 localities by 1988, and they need to show by the end of the year they have plans for attainment (to meet air pollution standards)."

Many legislators in both the House and Senate also are urging the government to consider ethanol and methanol as a new approach to curb urban air pollution.

Sen. Larry Pressler (R-S.D.) has presented a non-binding resolution to the Senate "urging the federal government to encourage the increased use of ethanol and methanol to reduce air pollution, U.S. grain surplus and provide other benefits."

Pressler is one of several legislators who would like diesel buses and trucks to switch to methanol.

"Diesel trucks and buses emit 30 to 70 times more toxic particulate matter than conventional engines . . . the shift to clean-burning methanol significantly reduces bus emissions," Pressler says.

Meanwhile, a study prepared for the Rocky Mountain Oil and Gas Assn. estimates the costs of requiring alcohol fuels would range from approximately 3.5¢ to 7.0¢ more per gallon than conventional gasoline.

Studies have determined that use of a 10% blending of ethanol in gasoline significantly reduces carbon monoxide levels from car exhaust. **NPN**

West Coast Battle Heats Up As Arco Defends Big Gains

For 80 years or so, or almost ever since the old Standard Oil of California and Royal Dutch/Shell opened the first service stations in Seattle, major oil companies have sporadically fought pitched battles for market position on the West Coast.

This birthplace of such things as self-service and high-volume pumpers has never seen anything quite like what has been going on since early 1982, though.

Arco, at that time, threw down the gauntlet by tossing out its credit card and adopting the independent's low-price, high-volume marketing strategy. It later withdrew from the East Coast and Midwest, and let one and all know that the West Coast was now its playground.

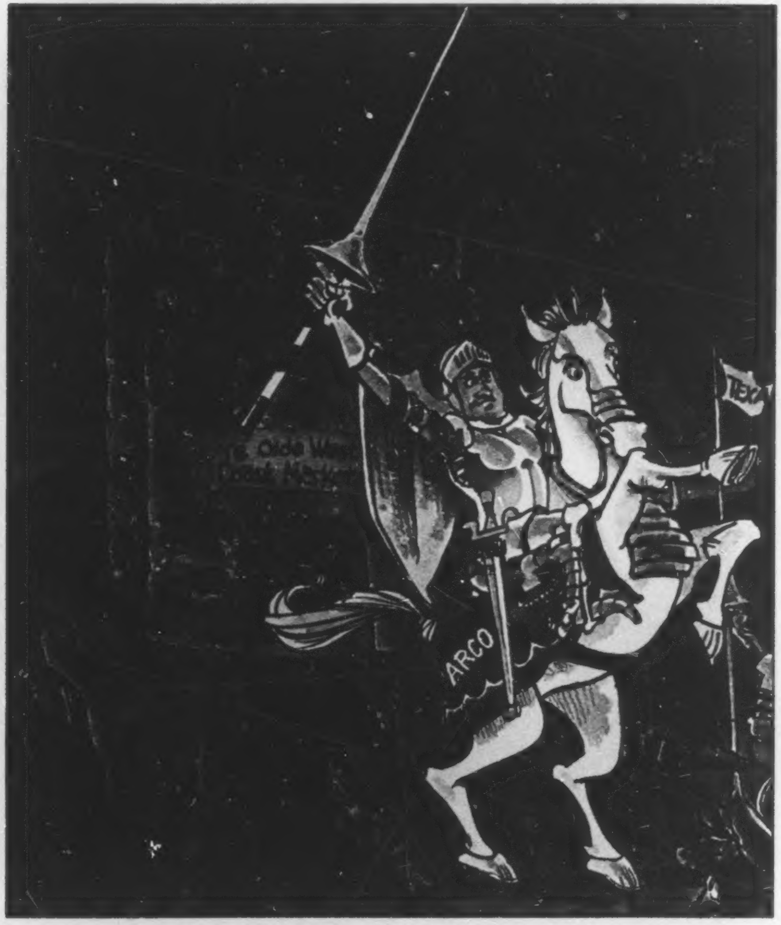
By Mark Emond
Contributing Correspondent

Many competitors thought Arco's management had taken leave of their senses by dropping their credit card. They were convinced of it when the company slashed its prices to depths far below the market and kept them there. Some said, hopefully, just wait until their earnings reports come out showing deep losses and we'll see an end to this foolishness.

What competitors didn't realize was that Arco's strategy had been carefully plotted since the early 1970s. It had streamlined its refineries to make them among the most efficient in the industry, had made sharp reductions in its personnel overhead and had figured out how to make more money on high volumes and low margins rather than the other way around.

And, the company owned a whole lot of crude oil in Alaska.

"The (other) majors thought we were making a colossal mistake (in dropping the credit card)," gloats George Babikian, Arco Petroleum Products president and chief architect of the program. "Their reasoning must have been, 'Let them go to it. They're going to go right down the sewer.' "



That didn't happen.

Instead, this "bad boy" among the majors has blown away most of its major company competition and has sent big-name independents scurrying to get under a major flag, preferably Arco's. Slashing its prices 6¢ to 8¢ gal. and often more, Arco's gallonage and marketshare have zoomed to lofty heights at the expense of others.

Arco has already replaced Chevron as California's No. 1 gasoline marketer—something most competitors said would never happen—and is on the brink of grabbing the top spot from Chevron in all of the seven-state PAD 5 marketing region.

Today, some competitors grudgingly admit that Arco not only knew what it was doing in 1982 but came up with one of the smartest marketing strategies the region has ever seen. Says one independent: "Arco has not just fundamentally changed oil marketing (on the West Coast); it has changed the whole oil industry . . . for the good, in terms of efficiency and yield to stockholders."

That may be so, but in running roughshod with Mexican spurs over its competition, the company has caused a lot of wounds and rubbed salt in them. Other majors, still a little stunned by Arco's rapid climb to the top, are now believed to be plotting strategies of their own to regain lost ground. New battles lines, it's believed, are being drawn.

Just about everybody in the West is watching to see if some major, perhaps Chevron, won't now fling down its gauntlet and take the upstart Arco on.

Big Stakes

Few doubt that a new Battle Royal is shaping up, something not that unusual for this region. Both the major oil companies and big-name independents have always played for keeps when rolling their marbles into this volatile market, and with little wonder.

It is an enormous gasoline market.

One of every 6 gal. of gasoline sold in the United States is sold in the seven-state PAD 5, one of every 9 sold in the U.S. is

Arco's aggressive gasoline marketing strategy has moved the company to within a whisker of being the number one gasoline marketer on the West Coast. In 1986, Arco edged ahead of Chevron to become the number one California marketer. The company's average station throughput in the huge Los Angeles market is a phenomenal 175,000 gal.

sold in California, and one of every 23 is sold in the Los Angeles Basin.

Los Angeles, the world's largest gasoline market and Phoenix are known as the land of ultra high-volume big pumpers. Big-time independents have been known to give away Cadillacs in Los Angeles to build volume. Some majors have dropped millions just trying and failing to enter the region.

It is, without question, a market worth fighting for, if volume and the economies of scale associated with high gallonage are what is desired.

That is exactly what Arco sought and the company has simply "cleaned just about everybody's plow," as one competitor puts it, since kicking off its drive five years ago.

Arco in 1986 had 16.74% of the California market compared to runner-up Chevron's 15.62%, according to Lundberg Survey Inc., although Chevron has roughly twice the number of stations in the state that Arco has. In PAD 5 as a whole (Washington, Oregon, California, Nevada, Arizona, Alaska and Hawaii), Chevron still leads in gasoline market share in 1986 with 16.36%. Arco, however, had 15.68% of the total PAD 5 market last year compared to just 9.93% in 1981. Arco's gains have been so relentless, it seems to be only a matter of time before it becomes No. 1 in the entire region.

In Los Angeles, Arco has established a phenomenal record, pushing its market share to 23.3% and its monthly average station throughput to 152,000 gal. in 1986, according to Whitney Leigh Corp., a market-research firm specializing in tracking gasoline statistics in selected metropolitan markets. Arco reports the average at its own stations in the area is 175,000 gal. a month.

Arco's Los Angeles throughput is twice the industry average and a long way out in front of the 106,000 gal. average of second-place Shell in per-unit throughput.

Arco's success in Los Angeles looms large for two main reasons: First, the market is so big and profitable. It dominates the state and, to a lesser extent, the region. Los Angeles represents 40% of California's total gasoline sales and 28% of PAD 5's. Second, and strategically more important, Los Angeles is a blueprint for Arco expansion elsewhere. The company has declared its intention to spread its Los Angeles success to other markets. It has turned its guns on Arizona, with already striking results, and is getting ready for an invasion of northern California, two areas in which it has been relatively weaker.

The Arco Strategy

Arco, in effect, became a fighting independent in major guise, combining the guile and aggressiveness of the independent gasoline marketer with the economic power of a major integrated oil company when it launched its blitzkrieg in early 1982.

In addition to adopting the independent's low-price, high-volume gasoline strategy, Arco also made a heavy commitment to convenience food stores at a time when most other majors still had committees studying the feasibility of such things.

Today, the combination of Arco's am/pm C-stores and high-volume pumpers seems to be almost unbeatable.

Two essential features of Arco's program are its low self-serve prices, ostensibly justified by the elimination of credit cards, and the am/pm stores, which provide traffic and ancillary income enabling dealers to live with very low margins.

The C-store chain started as far back as 1972. In its early years it was a mongrel mixture of designs, colors, and merchandising programs. By 1978-79, "we had 300 of these and hundreds more were planned," says Babikian. "We said we had to bring this under control, and that's when am/pm was created. We standardized the color, the promotions, the store layout, and what we were selling. It just took off."

With 500 am/pm stores in 1986 and plans for 1,000 by 1992, Babikian calls it, "the most successful program ever implemented by marketing."

'Being No. 1 isn't paramount, but the volume is'

Arco is even building am/pm stores alone, with no gasoline, just for the profits they churn out. One such store is doing $3,000-$3,300 a day from 6 a.m. to 7 p.m. Arco plans to build "half a dozen" more stand-alones and start another franchise if they're successful.

In Arco's view, the battle that it launched in April, 1982, for West Coast supremacy was basically won in a few short months. Says Babikian, "By the fall of 1982, it was absolutely over with." Arco had doubled its station volumes, and intended to keep them.

"Obviously, we weren't going to lose the volume we got. And that's been our position since day one," he explains. "We're not in business for sport; we want to make money, too. But we've got a vested interest in what we've done, and we're going to protect that."

Being No. 1 isn't paramount, but the volume is, says Babikian. "What we don't want to give up is the economy of scale. That's absolutely essential to our program. If our dealers lost 50,000 gal. a month, they couldn't do what they're doing."

The "chest thumping" Arco did after blowing up its credit card in multimedia advertisements was deliberate. "We didn't want anyone else to get rid of the credit card," says Babikian. "When the figures came out and they saw the phenomenal increases we were experiencing, we didn't want them to copy us."

Babikian went on press tours to all of Arco's principal cities in the country, telling everybody "how great we were," he says. "That was designed to put Arco in the No. 1 position where, if anyone did anything with credit, they knew they were going to be a me-too company. And that worked phenomenally well."

Five years later, nobody has been able to match Arco's low, low prices, and everybody but Unocal is trying to catch up with Arco's headlong am/pm expansion. But nobody's keeping pace.

By Arco's own economic logic, it could be that the company has accomplished enough to be willing to back off, or at least not push so hard. At the same time, though, as Babikian says, the company doesn't plan to give up any of its gains.

"We're oversold, and have been," says Babikian. "So we could keep that (throughput) volume going up, but there isn't any sense because we don't have the gasoline to do it. Our own stations (in Los Angeles) did 175,000 gal. in December. . . . That's plenty of volume for us in our stations, as an average. We're very happy with that. That makes our whole system work."

Here's how Arco and its principal competitors stand in three other key West Coast markets, according to Whitney Leigh Corp. "Gas Track" reports:

In the San Francisco Bay area, Arco's average station throughput in December 1986 was 168,000 gal., with Shell at 118,000 and Chevron at 86,000. However, Arco ran third in market share with 14.0%, compared with Shell at 22.9% and Chevron at 19.9%. In Phoenix, Arco's

George Babikian

'What we don't want to give up is the economy of scale. That's absolutely essential to our program.'

average station throughput in December 1986 was 202,000, with runnerup Mobil at 100,000. Arco was first in market share with 18.7%, followed closely by Mobil with 18.4%. In Seattle, Arco's average station throughput in November 1986 was 112,000 gal., with second-place Unocal at 72,000. Arco was runaway No. 1 with 20.3% in market share, followed by Chevron with 13.0%. (For a summary of Whitney Leigh market shares and average station throughputs in Los Angeles, San Francisco, Phoenix, and Seattle, see accompanying table.)

By the principle Babikian enunciated, the throughputs in all of these primary markets would appear to satisfy Arco's system requirements. The company's market-share requirements, whatever they may be, aren't known. In any event, it doesn't mean Arco will stop pushing.

Wherever Arco does not have what it considers sufficient volumes to make the system work, it appears to be a practical certainty that the company will continue to push, within supply limitations.

As long as consumers remain price conscious and Arco continues to have ample economical products, the company's current program will probably continue much as is.

Arco's Alaskan production will begin to decline in 1989, unless the company further enhances oil recovery or makes another significant discovery, for which competitors are not ardently wishing.

What Arco's Competitors Are Doing

Arco's major competitors do not delude themselves about the company's success. This includes Chevron, which bore the brunt of Arco's attack.

"You really must give Arco a helluva lot of credit for what they did when decontrol came," a Chevron marketer says. "They radically changed their way of doing business." In Los Angeles, "they really cleaned our plow," he adds.

Throughout the West, frenetic market repositioning is taking place, with some companies deliberately pursuing an identity or niche.

Arco has chosen the price end of the spectrum, Unocal the service end. Shell believes strongly in its quality credit-card customers and credits its success to knowing who its customers are.

Says a Shell marketer, "I think there are going to be two marketers on the West Coast in the future, Arco and Shell. Those are the two companies that know who their customers are. You can't be all things to all people."

The market changes Arco saw when it fundamentally revised its way of marketing were not seen as clearly by others, if at all.

Chevron, the traditional full-service marketer par excellence, got caught in a shifting riptide. "Times came real hard for a historical full-serve operator like ourselves," a Chevron marketer says. "The world changed and the market got competitive, and pricing suddenly became the No. 1 factor. Whereas from 1973 to 1981 all people were interested in was getting product."

Because of Chevron's geographic representation, brand acceptance and other factors, Chevron dealers had become used to fat margins, with some stretching to 18¢ gal. at the time of decontrol.

With rental incentives, rebates, and counseling, some Chevron dealers have become much more competitive, but many are still obtaining relatively wide margins, holding up the average.

Chevron has embarked on an ambitious investment program, eliminating many marginal units, including many conventional outlets. While still building some conventional stations, the company is going for a wider mix, particularly "pumpers" with ancillary profit centers, mainly C-stores.

In a $600 million upgrading program, Chevron is building several hundred C-store stations of its own, on top of some 2,300 mostly jobber outlets already operating across the country.

"We didn't start our investment program until halfway through 1984," a Chevron marketer says. "We've got a combination now of good merchandising

	1980	1981	1982	1983	1984	1985	1986
Arco	11.02%	11.20%	[illegible]	[illegible]	[illegible]	18.00%	[illegible]
Chevron	[illegible]	17.10	15.57	16.42	[illegible]	15.24	[illegible]
Shell	14.22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14.34
Unocal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mobil	8.34	[illegible]	[illegible]	7.59	7.04	[illegible]	8.18
Texaco	6.50	6.70	[illegible]	5.32	[illegible]	[illegible]	[illegible]
Exxon	[illegible]	[illegible]	4.79	[illegible]	[illegible]	[illegible]	[illegible]
Nonmajor	[illegible]	20.00	19.70	20.79	20.40	[illegible]	[illegible]

[illegible]

	1980	1981	1982	1983	1984	1985	1986
Chevron	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Arco	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Shell	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.47
Unocal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mobil	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Texaco	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Exxon	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nonmajor	[illegible]	[illegible]	23.05	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

*PADD 5: CA, OR, WA, NV, AZ, AK, HI

Chevron is moving up fast on station throughputs

Unocal is marching to a different drummer among West Coast majors, moving in the direction of multibay, automotive service, full-serve and split island stations.

and sound investments, and that's what's giving us increases."

Chevron's California gasoline market share fell sharply to 15.57% in 1982 from 18.50% in 1980, and leveled off after that, Lundberg Survey data shows. In PAD 5, after falling to a low of 15.63% in 1982, Chevron's share increased to the 16.12-16.43% range in the years since then. (For California and PAD 5 market shares, see accompanying tables and graphs.)

In greater Los Angeles, Chevron shows the largest gains in average station throughput, with 86,000 gal. in 1986, up almost 70% from its 51,000 in 1983, according to Whitney Leigh (see graph). In market-share growth there the past three years, Chevron (33%) is second only to Arco (46%).

"We'll catch those other suckers," says a Chevron marketer. "It's going to take us a while. Realistically, I don't say we're going to catch 160,000 in a short period of time, but I think we can catch the other folks who are 100,000."

Shell, the No. 3 marketer on the West Coast, has been a leader in station design for many years, and has been quick to expand its chain of high-volume self-serve-only stations. Old stations, and even relatively new ones, are being torn down and replaced with what competitors call "beautiful" units.

Says an independent refiner, "They've got a premier retail system that does a superb job. I think they sell all they have. They could be a lot tougher if they wanted to be."

Mobil, Exxon, and Texaco are a mixed bag, competitors say. Mobil has plowed a lot of money into some markets, but isn't showing much volume gain. Exxon is tough in dealer-tankwagon pricing, but isn't trying to expand, a mystery to others. Texaco is building some big, new stations, but is burdened by heavy reliance on distributors, many of whose stations are low volume and do not measure up to the new standards.

Unocal is one West Coast player which appears to be remaining aloof from the volume fray that seems to be shaping up. It has its sights on the full-serve and automotive-service niche.

The Unocal Way

Unocal's primary objective is to specialize in the automotive service that most other oil companies are vacating or de-emphasizing.

Says Clay Warnock, Unocal vice president of refining and marketing, Western region, "I think Arco and Unocal have done the best job of carving out a special niche in the marketplace; they're at one end and we're at the other.

"We've thought our strategy out very carefully over the past four or five years, and we keep examining that strategy, and by design we are filling the vacuum that's being left in the marketplace in the way of automotive services."

Warnock believes the changes Arco started in 1982 are accelerating, not slowing, with other companies "getting further and further away from the traditional service-oriented type of marketer."

He explains, "Basically, it's the convenience-store type of operation that almost every major, with the exception of one (Unocal) is embarked on in the Western corridor, from Bellingham, Wash., to San Diego."

On the contrary, "our direction is toward the multibay, full-serve, and split-island station that basically has the capability of handling large volumes of gasoline, but able to give full-service too, and to handle the automotive-service needs that are becoming more and more in demand," he says.

Unocal is expanding service professionalism as never before, with five training centers and an extensive "Protech" auto-care program. The company has 32 "superfacilities" so far (4 to 6 bays), with 9 more under construction.

"We just ran some numbers on our superfacilities, and the average throughput was between 135,000 and 140,000 gal., with backroom sales that average a little over $40,000 a month," he says. Unocal sold $30 million of TBA (tires, batteries, and accessories) in 1986.

Warnock believes Unocal's strategy gives it long-term benefits. "To reverse the position many of the majors have taken throughout the country would take tremendous amounts of capital," he says. "You just don't overnight go back and open up all those bays."

The Independent Dilemma

Another aspect of Arco's rapid expansion since 1982 has been branding up or buying high-volume independents. When its station throughputs peaked and leveled off, Arco aggressively signed up some of the most competitive private-branders and open dealers, and also purchased choice stations in many markets. "We were allowed to get away with that, too," says Babikian.

West Coast independent gasoline marketers, however, feel squeezed from almost all directions. Those who haven't cut a deal with Arco feel backed to the wall because of aggressive Arco pricing. They are increasingly restless about the diminishing supply of products from independent refiners. They are caught in the middle of feuding majors, with visions of worse to come.

Things are bad enough even if they don't get worse. Says Herb Richards, president of Coast Oil, San Jose, Calif., "All the companies are closing two stations and spending money on one, and they want to get more gallonage out of the one. Somebody that was doing 15,000 (a month)—they want to be doing 115,000."

"They're getting rid of a lot of the old-time dealers. The ones they're leaving behind are very, very competitive. They've got these guys scared because they've been told if they don't do this, they're going to close the station up."

The ranks of lessee dealers are being decimated as suppliers shut down stations and convert conventional automotive-service stations to self-serves and C-stores. Dealer leaders like Steve Shelton in southern California, Jim Campbell in northern California, and Tim Hamilton in Washington are fighting the trend, but with limited success. One victory is the passage of some local ordinances banning conversion to self-serve.

Independents criticize Arco for cutting prices deeper than necessary—"leaving money on the table," it's called. This was a universal criticism until recently, lessening as Arco is reported to be easing off at times.

"In the past it was evident Arco was leaving a lot of money on the table," says a Shell marketer. They were giving their dealers such attractive DTWs (dealer tankwagon prices), they could undercut anybody at will at retail, and did so.

"I don't see the dealer retail pricing quite as competitive as it was, but it doesn't seem to be stopping them any (in sales), which proves the point that Arco did leave money on the table before. They didn't need to be as tough as they were, because their share of market indicates they are still doing great guns out there (at higher DTW prices)."

There is no niche for independents in commercial markets, even for products like lube oils. Since Arco doesn't market to commercial customers, other majors, particularly Chevron and Unocal, reportedly make the most of it.

Fred Bertetta Jr., president of Olympian Oil Co., South San Francisco, is shocked by Unocal. "The major problem area is majors going after commercial business, especially Union Oil," he says. "I've seen Union go in and quote prices to commercial accounts that are so far below what they're selling for to their branded dealers, it's unreal." He mentions the case of Yellow Cab at 6¢ gal. below.

"Unocal leaves more money on the table in the commercial business than anybody," says Bertetta. "They leave a ton of money on the table. If they want an account, they just keep dropping and dropping until they've got the guy. No doubt about that one. They leave so much money on the table on their 30 weight motor oil, their bids are a joke."

Many independents are giving up the uncertainties of private-brand marketing and branding major, for security of supply and margin protection. This adds to their loss of market share as a group.

In the seven West Coast states (PAD 5), independent market share of taxable gasoline gallonage has dropped to 19% in 1986 from 24% in 1981, the Lundberg Survey reports. In California, their share dropped to 18% in 1986 from 21% in 1983.

The record appears to be considerably worse in key metropolitan areas. According to Whitney Leigh Corp., gasoline volume of nonmajor marketers in greater Los Angeles fell to 11.0% in 1986 from 22.2% in 1983.

The list of private-branders who have branded up or sold at least some of their stations is like a who's who of independents: World, Thrifty, Douglas, USA, Awful Bros., Herbst, State, U-Save, Time, Coast, Wickland, Gull.

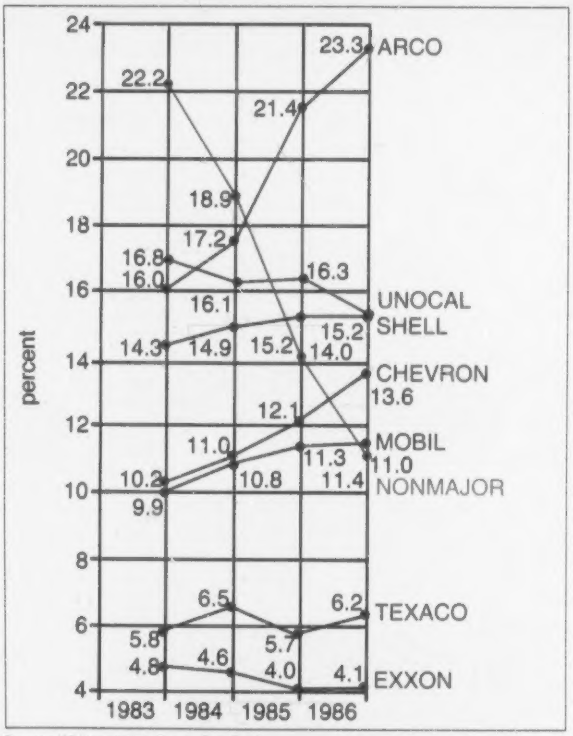
The overhanging threat for most independents is a possible declaration of war against Arco by one or more majors, although there are differing views on what this would mean to independents.

"My concerns are that if Chevron and these other companies make a run at Arco," says Bertetta "we're going to have to hide behind a rock, because the crossfire would wipe us out."

Bertetta has already deemphasized retail marketing because of Arco pricing. "Wherever Arco is, there is no way," he

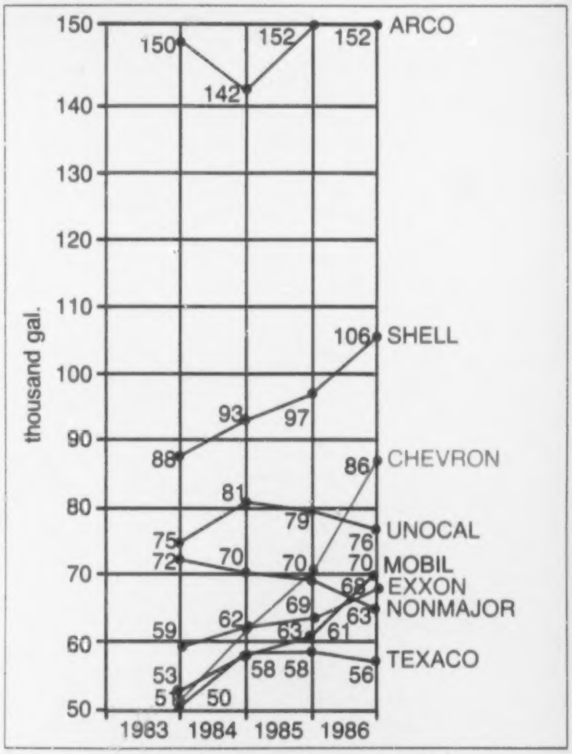
A war between majors could spell trouble for indies

Battle report from the world's largest market



Source: Whitney Leigh Corp., Gas Track.

Greater Los Angeles gasoline market share, 1983-1986.



Greater Los Angeles average station gallonage per month, 1983-1986.

says. "There is no way to stay across the street from Arco, for us. Where there are no Arco's, we can make something out of it."

Says Walt Dwelle, senior vice president of marketing, Beacon Oil, a California integrated independent, "My opinion is that over the long haul it may be the best thing if somebody takes them (Arco) on, like Chevron. Sure and hell it would be a bloodbath for all of us, maybe for a year, but it probably could get this market straightened out.

"Arco has been pretty much having their way ever since they blew up their credit card. I kind of wish that that had happened the minute Arco took off on this track, and we'd probably have a much stronger market now because of it. Chevron could do it, certainly, but it's not going to be easy."

Some marketers don't give Chevron much of a chance of successfully challenging Arco. "Chevron lost $128 million downstream in the fourth quarter of 1986," says one. "They simply can't compete with Arco because they don't have the economies of scale. If Arco wants to stop Chevron in their tracks, they will prevent them from getting those economies of scale."

Others think Chevron can clobber Arco. Says Jay Colin, president of State Oil, Los Angeles, "I've got news for them (Arco). They'll be buried by Chevron. Chevron has got better corners. Sooner than later they're going to rebuild them all, and they're going to tell Arco where to go."

Independent gasoline marketers used to be able to buy from 10 or 15 significant independent refiners several years ago, but are now down to only five or six.

Independents consider Tosco their main source of supply, followed by Champlin. Exxon is a big supplier of other refiners and perhaps brokers and traders, but doesn't do much unbranded business with individual marketers. Other important unbranded suppliers are Tesoro, Wickland, Golden West, Texaco, Chevron, and Gull.

In all of PAD 5, in 1986, the top five independents in taxable gasoline volume (market share in parentheses) were: Tosco (2.90%), Golden West (1.91%), Wickland (1.67%), Beacon (1.48%), and Champlin (1.40%), Lundberg Survey reports. Tosco and Champlin market only at wholesale; the others have retail outlets of their own.

Imported gasoline, mostly from China, is a significant source of supply for independents at times, but it is not as dependable as many hoped. Some 60,000 b/d of gasoline and gasoline blending components were imported into PAD 5 in 1985, but only 47,000 b/d in 1986, the Energy Information Administration reports.

(Continued on page 42)

. . . 'the real battle is yet to come'

Trading in Far East gasoline can be capricious, traders say, subject to many economic influences throughout the world. At any time, the West Coast can lose its attractiveness in the eyes of certain exporters, relative to other markets, and U.S. gasoline importers can be left high and dry.

At most, gasoline imports amount to only 3-4% of West Coast consumption.

What the Future Holds

All indications are that the real battle is yet to come on the West Coast. Unless Arco gets religion, just about everybody expects some major sooner or later to fling down the gauntlet. If it's Chevron that does, Shell and Mobil will almost certainly jump right into the thick of it.

That would be sufficient to make it a generalized war.

Standard Oil of Ohio, with its huge surplus of Alaskan crude oil, is a possible new entrant, but the company has been one for nearly a decade and still has not made the move. Refineries and station chains have been available, and possibly a few still are, but Standard has passed many by and the pickings are getting slim.

"The West Coast is a good market, so you're going to find more and more entrants," says Arco's Babikian. "But it's a tough market to get into. I don't think anybody's going to be able to build a refinery out here.

"Standard seems to have a chance to come out here. They've said they want to if they can do so economically. There are some good candidates available for them, but apparently they haven't been able to work anything out. They've got to buy a refinery system that can be expanded. Tosco seemed like a good one to me. I was surprised they let that one go."

"I have a hunch Standard will be out here before long," says Paul Erdos, executive director of Serve Yourself and Multiple Pump Assn., Los Angeles. "They maintain West Coast contacts, and all it will take is one big buyout and they're here."

Investment banking circles report Thrifty Oil, with its Golden West refinery, and World Oil, with its Sunland refinery, have been totally on the block for some time, with no takers, although some individual station properties have been sold.

The shutdown Powerine refinery has been purchased by some Austrian investors and is supposed to be cranking up, but it isn't considered a likely candidate for whatever ambitions Sohio might have.

What Else They're Saying

"What would I like to see happen? Long lines at the service station. It could happen anytime, but you can't wait for that. I think a normal market would be all right. I hope that Chevron and Arco would have enough sense to find out where their place is and let the rest of us live. Those two kind of scare me if they keep battling each other."

Herb Richards
President
Coast Oil
San Jose, Calif.

"I think Arco is a little less aggressive than they were a year ago and will become less aggressive in the future. When you're No. 1, you've got more to lose if you get too far out of line. They get more and more concentrated, if they cause the market to go down, they're going to be the big losers."

Herb Richards
President
Coast Oil
San Jose, Calif.

"Arco doesn't give a damn about their unbranded business in California, so I don't think independents could consider them a secure source of supply. But their posture in the Northwest is very different from that. In the Northwest a very significant portion of their business is the unbranded market, so there Arco is likely to be a more secure unbranded supplier."

Independent refiner

"Exxon has done basically nothing on the West Coast the past four or five years. They've had occasional new outlets here and there, but for the largest oil company in the world and largest retail gasoline marketer in the world, it's amazing they haven't done more. They're priced very competitively, but that's about it."

Independent marketer

"You can't really do anything about Arco. It gets to the point where if we did try to fight them, there would be a bloodbath. I think other majors look at it the same way. Nobody wants to fight them, because what's the point of running the business in the area if you don't make any money. It's better to leave them alone than to bring everybody into the act."

Major marketer

"Chevron and Shell stay remarkably close to each other (in prices). I'm sure it's by design. They're watching each other. I think Chevron prices off Shell and Shell prices off Chevron. There's very little difference between the two."

Major marketer

"George Babikian is maybe the smartest guy in the oil industry . . . his understanding and his reactions. I have seen how he handles himself and stands his ground in a hostile audience. . . . It's almost hero worship."

Multibrand major distributor

But even without new entrants, the West Coast appears to be in for some wild times. There doesn't seem to be any way for retail margins to escape being squeezed even more than they are already. Many independents will manage to stay alive by flying major flags as long as they must. Those who go it alone will have to be more efficient than they have ever been just to survive.

Arco has made its choice to concentrate its entire marketing efforts on the West Coast, and to that decision everybody else is fatefully tied.

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June 1987
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Memphis Update: A 'Fight or Run' Market
How 'Sidelines' Pay Off For Smith Oil
West Coast Cardlock System's Growth Plans

NPN
National Petroleum News

The New 'Image' Kick
Will Supplier
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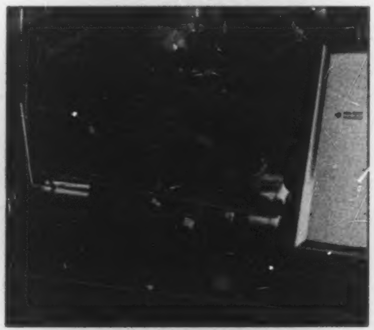
Once again, major oil companies are on an "image" binge with modern new stations or rehabs of existing units. Part of their strategy includes millions of dollars in incentives to encourage jobbers to actively participate. **Page 40**



A growing network of franchised cardlock fueling stations appears to be offering many marketers the opportunity to expand their commercial cardlock businesses without a big capital outlay. **Page 46**

Like a barroom brawl crashing out into a back alley, Memphis marketers are taking their sharp marketing tactics beyond city limits, building multi-million dollar truck stops and keeping the city's reputation for rugged competition intact. **Page 50**

• TRENDS

Will Multiple Supplier Trend Hurt Jobbers?

A trend that started among jobbers for their very survival in the scary supply days of the 1970s could be backfiring on them now. Refiner-suppliers, from most indications, are becoming increasingly nervous about the "loyalty" of branded distributors who have multiple supply sources. As a result, some suppliers are increasing their "controlled" outlets.

The concern about jobber "loyalty" in steadily buying their contracted supply appeared to be one of the reasons Conoco put new incentives and restrictions in its jobber supply contracts as part of its brand standardization program [*NPN*—March '87, p13]. Other refiner-suppliers are also becoming more insistent that jobbers pull the product they contract to buy.

The refiners say it's tough to operate their refineries and distribution systems efficiently when their branded jobbers buy too little or too much of their contracted supply. They accuse some jobbers of jumping from one supplier to another for as little as 0.25¢ a gal.

Jobbers say this is nonsense. One of them says that a jobber who has a branded franchise will be "loyal" to that supplier as long as prices "are competitive." This jobber admits, though, that he shops among his sources each day for the cheapest price.

This is a relatively new attitude. Prior to the 1980s, a jobber usually had one supplier and one brand and rarely bought product on the "outside." But during short-supply times in the 1970s, refiners couldn't always supply all their jobbers' requirements and in many cases advised them to find extra product wherever they could. Many jobbers did, often lining up a half-dozen or more sources. Now, for reasons of both supply insurance in case of new shortages and for price, the jobbers are reluctant to return to the old days of having just one brand, one supplier.

Refiners no longer offer certain enticements, either, for a jobber to stick loyally with them and shun all others. In the pre-1970s, there were the goodies such as price protection, free credit cards, liberal credit terms, freight allowances, free this and free that. A major brand jobber had to think twice before he gave up a major flag. Most such freebies are gone now and about all the major refiner can do is raise questions about the endurance and "staying power" of a jobber's alternate supply sources.

Some jobbers complain that refiner-suppliers aren't sufficiently competitive at times, letting their jobber buying price get "out of the market" and then is slow to do anything about it.

Phillip R. Chisholm, executive vice-president of Petroleum Marketers Assn. of America, points out that most jobber supply contracts state how much product a jobber will buy but say nothing about price. He believes this is unusual, that most distributor agreements in other businesses do have clauses about price. The jobber, in a way, has to trust that his contracted supplier won't leave him swinging slowly in the wind when other suppliers start slashing prices.

Many jobbers, obviously, are wary of such blind trust in today's market. They believe a way to keep their primary supplier in line at the jobber racks is to have alternate sources to turn to if necessary.

Some refiner-suppliers, though, including some often referred to as "minor" or "baby majors," are now taking some "insurance" steps of their own. They are buying up a distributor here and there, and also increasing their ownership of company stations. One large chain retailer says that these days it's difficult to discuss supply arrangements with some companies without getting an offer to buy part or all of his business.

A representative of one company on such a buy-out binge says he wants more controlled outlets so he knows how much gasoline and other products to make each day. He adds that product flowing through his jobber channel can fluctuate too much each day. *—Marvin Reid*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

MARCH	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$ .918	$ .856	$ .912	$1.052
Regions:				
Northeast	.921	.849	.896	1.042
North Central	.895	.848	.895	1.038
South	.913	.845	.905	1.043
West	.943	.879	.946	1.095

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	5/1/87	5/2/86
Gasoline (total)	243,479	206,261
Gasoline (Unleaded)*	142,008	108,652
Jet Kerosine	40,572	39,220
Distillates	100,151	96,059
Residual	38,034	36,301

**Included in gasoline total.*

Source: American Petroleum Institute.

NPN

NATIONAL PETROLEUM NEWS JUNE 1987

Exxon's Long Asset Shadow: 76% Greater Than 2nd Place Mobil

With assets of $69.5-billion at the end of 1986, Exxon Corp. is by far the biggest of the score or so of megabuck companies that supply U.S. consumers with most of their gasoline, heating oil and other petroleum products.

Mobil is the industry's second largest in terms of assets, but even with $39.4-billion in its favor, it's still only about half the size of Exxon, the titan of them all. Texaco slipped ahead of Chevron in 1986 and now ranks third. Its assets are listed at $34.9-billion and Chevron's at $34.8-billion. Shell, which became the country's leading gasoline marketer last year [*NPN*—May '87, p29] ranked fifth, with assets of $26.2-billion.

The erosion of Chevron, which had been the No. 1 gasoline marketer prior to Shell's takeover, is interesting but not necessarily surprising.

Chevron had been ranked about fifth in size in 1984 when it bought Gulf Oil Corp. for $13-billion, still the biggest single acquisition in the nation's history, bar none. That achievement enabled Chevron to vault to second place in size and to take over leadership in the annual gasoline gallonage derby.

Forced by law to divest itself of properties in the Southeast and pressed into retreat in the bitterly competitive Northeast, Chevron's total assets shrank in 1984 by a restatement of its Gulf acquisition, then again in 1986 to $34.9-billion, its second big decline in three years.

Exxon, Arco and Pennzoil were the only companies that appeared to have improved their asset structures in 1986. Exxon rose 0.5%, Arco 6.5% and Pennzoil 2.1%. Exxon, however, was the only one that had maintained the growth pattern of the 1980s.

Another interesting sidelight to the current rankings of companies by assets is the reemergence of both Conoco and Marathon Petroleum. After Conoco was acquired by Du Pont and Marathon by U.S. Steel (now known as USX Corp.), their sales figures, earnings and other vital statistics were rolled into the corporate reports, thus circumscribing the traditional financial materials and making comparisons impossible.

The asset data are once again available for both so they now can be included in the listings of the top 25 marketing companies. Conoco ranks 10th in oil assets and Marathon, 14th.

Limited data on other big independent marketers are now available too, including Citgo, which is Southland's marketing

The Billion Dollar Companies And Where They Stand

	Ranking		(In billions of dollars) Assets		%
	1986	1985	1986	1985	Change
Exxon	1	1	$69,484	$69,160	0.5%
Mobil	2	2	39,412	41,752	(5.6)
Texaco	3	4	34,940	37,703	(7.3)
Chevron	4	3	34,853	38,889	(11.1)
Shell	5	5	26,214	26,528	(1.2)
Amoco	6	6	23,706	25,198	(5.9)
Arco	7	8	21,603	20,279	(6.5)
Tenneco	8	7	18,021	20,437	(11.8)
Standard	9	9	15,955	18,330	(13.0)
Conoco	10	10	13,000	14,115	(7.9)
Phillips	11	11	12,399	14,045	(11.7)
Sun	12	11	11,684	12,923	(9.6)
Unocal	13	13	10,133	10,797	(6.2)
Marathon	14	14	9,184	10,074	(8.8)
Coastal	15	15	7,877	8,258	(4.6)
Amer. Hess	16	16	4,914	6,219	(21.0)
Ashland	17	18	3,805	3,928	(3.1)
Dia. Sham.	18	17	3,517	4,618	(23.8)
Pennzoil	19	19	3,369	3,300	2.1
Kerr-McGee	20	21	3,090	3,702	(16.5)
Murphy	21	20	1,980	2,661	(25.6)
Amer. Petrofina	22	22	1,777	1,274	(2.2)
Citgo/Southland	23	23	1,210	1,274	(5.0)
Getty	24	24	(a)	(a)	—
Cumberland Farms (b)	25	25	—	—	—

(a) Getty's assets are slightly below $1-billion so this is for estimated ranking purposes only. (b) Cumberland Farms does not release financial details so this is for estimated purposes only.

Exxon's Long Asset Shadow, Continued...

division; Cumberland Farms, whose purchase of a Chevron-Gulf empire in the Northeast made it the nation's biggest independent marketer of gasoline; and Getty Petroleum, the second biggest independent. Southland nominally would outrank Getty as an independent gasoline marketer, and perhaps Cumberland too, but since it also has a refinery, its status is different—that of a refiner-marketer rather than a "pure" independent.

In addition to stunting asset growth in 1986, the collapse of crude and product prices also produced another major change in historic ratings and rankings.

Only two companies—Exxon and Mobil—earned more than $1-billion last year compared with six the year before. In bygone years there were as many as 10 to 12 in this exclusive "billionaire's club." Those who fell by the wayside in 1986 were Chevron, Amoco, Shell and Standard, formerly Sohio.

The table on page 31 summarizes the asset formulations of the past two years. Greater detail is contained in the *NPN Factbook.*

EXXON
EXXON
EXXON

Exxon Rides Crest; Others Lag in Asset Values

Of all the oil marketing companies with assets of $1-billion or more, only Exxon Corp. managed to continue the growth pattern of recent years in 1986. It barely made it into the plus column, however, with only a miniscule improvement of 0.5%.

Ten of the score or so multi-billion companies appeared to have hit their assets peaks—at least for the time being —in 1985 and 1984. Two have to go back to 1982 to find their financial high water marks (See related table).

A more startling comparison is that again, with the exception of Exxon, all of the top companies reported their 1986 assets were down significantly versus their peak years. Some can attribute this to the wrenching cutbacks in the wake of the collapse of crude and product marketplaces last year. Some can blame attritional processes as well as spinoffs of assets.

Some companies, Phillips and Unocal particularly, were forced to sell selected assets as a result of the havoc caused by corporate raiders. Others, like Chevron and Texaco, which inflated their sizes with big merger bites (Gulf and Getty, for example) were ordered by the courts to divest some of their assets to equalize competitive factors.

Oil Company Assets, '86 vs. Peak Years

	Peak Year	(In billions of dollars) Peak Year Asset Total	% Chng. '86 vs. Peak Year
Amer. Hess	1984	$ 6,353	(22.7%)
Amer. Petrofina	1985	1,817	(2.2)
Amoco	1983	25,805	(8.1)
Ashland	1982	4,210	(9.6)
Arco	1983	23,282	(7.2)
Coastal	1985	8,258	(5.8)
Chevron	1984	45,404(a)	(23.8)
Citgo	1981	6,049(b)	(70.6)
Conoco	1985	14,115	(7.9)
Dia. Sham.	1983	6,024	(41.6)
Exxon	1986	69,484	0.5
Kerr-McGee	1983	3,806	(18.8)
Marathon	1985	10,074	(8.8)
Mobil	1984	41,851	(5.8)
Murphy	1982	2,990	(33.8)
Pennzoil	1983	3,517	(4.2)
Phillips	1984	16,955	(26.9)
Shell	1985	26,528	(1.2)
Standard	1985	18,330	(13.0)
Sun	1985	12,923	(9.6)
Tenneco	1985	20,437	(11.8)
Texaco	1984	37,774	(7.5)
Unocal	1985	10,793	(6.1)

(a) In 1984, Chevron was required to keep its assets separate from those of Gulf, which it was acquiring; hence, the total reflects the combined assets of Chevron and Gulf. The following year after the merger was implemented, this total was restated as $36.38-billion which changes the percentage decrease to 6.7%.

(b) This was the old Citgo immediately before its acquisition by Occidental which sold off some of the assets and subsequently sold Citgo downstream marketing to Southland. A more appropriate asset valuation for comparison, therefore, might be 1982's $1.4-billion which would reduce the percentage decrease to 13.4%. NB: Getty Petroleum and Cumberland Farms also are big marketers but Getty's assets in 1986 were below $1-billion and Cumberland refuses to disclose financial data.

IRS, Continued. . .

station. It went into effect January 1986, but marketers didn't know about it until November.

However, IRS spokesman Bill Jackson says there have been so many petitions from petroleum groups—including the Society of Independent Gasoline Marketers of America, Petroleum Marketers Association of America, and the National Association of Truck Stop Operators—that the IRS is considering changes in the rule for off-highway diesel use. Jackson couldn't say what amendment might occur or when.

Marketer Group Against New PMPA Amendments

Amendments to the Petroleum Marketing Practices ACT (PMPA) have been reintroduced in Congress. But this time petroleum marketers aren't supporting the legislation because dealers dropped a controversial pricing provision.

PMAA spokesman David Morehead says marketers can't support the bill because it would not remove a "constructive termination clause" in the present PMPA law. He says marketers want to include the pricing provision to "make it more difficult for majors to cancel a marketer."

The bill was introduced by Reps. Douglas Walgren (D-Pa.) and Tom Tauke (R-Iowa). A Walgren staffer says the bill has been "much more widely accepted" among the service station industry because the bill drops the pricing provision.

The focus of the proposed changes is to make majors adopt a "fair and reasonable" policy for changing leases. For example, majors cannot refuse to renew leases, if dealers refuse to sign contracts making them responsible for tank leaks.

Weak Prices Depress First Quarters Upstream and Down

There were all sorts of reasons, depending upon which company was doing the talking, why the oil industry's first-quarter earnings sagged so badly. The principal one, however, seemed to be that product prices were very slow to reflect modest increases in crude oil cost.

Only Phillips Petroleum and Diamond Shamrock suffered real losses in the first quarter but the nets of virtually all other companies were down materially from the comparable period of 1986. The decreases ranged from a mild 8.6% (Kerr-McGee) to a shattering 74% (Sun).

Downstream earnings, which were so strong in 1986 on the basis of the plummeting crude oil prices, also turned sour for most companies in first quarter 1987. Of the 13 companies that had refining-marketing earnings available for the new year, seven were on the downside while six squeaked by in the plus column. Only Standard Oil Co. had a significant percentage change, a wild 1340% increase. The dollar amount really wasn't that much, however, only $65-million. Standard's principal source of supply is Alaskan crude and last year it was hurt by a bad price differential and this year the situation was reversed.

The boxscore below tells the story:

First Quarter Earnings: Corporate and Downstream

(millions of dollars)

		Corporate Net			Downstream	
	1st. qtr. 1987	1st. qtr. 1986	% Chng.	1st. qtr. 1987	1st. qtr. 1986	% Chng.
Exxon	$1,070.0	$1,710.0	(37.4)	($38.0)	$160.0	—
Mobil	252.0	440.0	(42.7)	2.0	50.0	(96.0)
Texaco	118.0	328.0	(64.0)	(55.0)	39.0	—
Chevron	198.0	377.0	(47.5)	(52.0)	48.0	—
Shell	108.0	276.0	(60.9)	8.0	61.0	(86.9)
Amoco	260.0	331.0	(21.4)	(5.0)	19.0	—
Arco	239.0	199.0	(20.1)	25.0	90.0	(72.2)
Tenneco	29.0	53.0	(45.3)	NA	NA	—
Standard	200.0	253.0	(20.9)	72.0	5.0	1340.0
Conoco*	55.0	153.0	(64.0)	NA	NA	—
Phillips	(32.0)	96.0	—	30.0	118.0	(74.6)
Sun	38.0	146.0	(74.0)	(12.0)	68.0	—
Unocal	60.7	70.2	(13.5)	NA	NA	—
Marathon*	115.0	(173.0)	—	NA	NA	—
Coastal	44.1	(52.0)	—	NA	NA	—
Amer. Hess	181.0	(329.0)	—	NA	NA	—
Ashland (a)	0.7	41.6	—	(34.6)	34.8	—
Dia. Sham.	(49.6)	(10.0)	—	NA	NA	—
Pennzoil	12.1	(16.1)	—	NA	NA	—
Kerr-McGee	20.2	22.1	(8.6)	5.3	(2.4)	—
Murphy	3.1	10.9	(71.6)	(0.4)	1.0	—
Petrofina	19.8	(39.7)	—	NA	NA	—
Citgo	NA	NA	—	NA	NA	—
Getty	NA	NA	—	NA	NA	—
Cumb. Farms	NA	NA	—	NA	NA	—
Crown Cent.	(15.2)	(17.7)	—	NA	NA	—

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* Conoco and Marathon are pretax operating income; (a) second quarter, fiscal ends 9/30.

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July 1987

How Iowa Jobber Profits from Change

Put the Finger on Employee Thieves

Is There Renewed Interest in TBA?

NPN

National Petroleum News

PROTECH Guaranteed

Unocal Sets Its Sights On Automotive Service

Unocal's Clay Warnock

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While most major oil companies are concentrating on self-service and convenience stores, Unocal has decided to concentrate on service, tires, batteries and accessories. **Page 34**

Internal theft costs millions of dollars. Here's how you can protect your business from dishonest employees. **Page 44**

Internal support and willingness to adapt have been key ingredients in the success story of W.A. Krause and his company's Kum & Go stores. **Page 50**

• TRENDS

Methanol Motor Fuel Looking Good Again

Is methanol as a motor fuel about to break away from its "some day" image and become a practical reality? And this doesn't mean a methanol-enhanced motor fuel, but a methanol motor fuel in its own right, perhaps laced with a couple of dollops of gasoline?

It has long been accepted that methanol is a logical and desirable substitute for gasoline in the next century when petroleum will no longer be abundant.

There's no question that it has great potential: higher octane than regular grade and substantially cleaner in terms of environmental considerations than most gasolines. It can be manufactured economically from this country's extensive and long term supply of coal or natural gas. Thus, it offers an escape from dependency on foreign oil.

Methanol can be used in cars and trucks with some mechanical changes to the engines. That's been proven already. But neither the oil nor the automotive industries have shown much interest so far. In effect, the oil industry's attitude is why get worked up if there are no cars to use it. The automakers respond that there's no point in producing such cars until fuel supplies are readily available.

But what's now going on in California indicates this "chicken and egg" cycle may be coming to a head faster than has been projected. It's conceivable that a methanol motor fuel may impact on the marketplace in the mid-1990s, first as a competitor of gasoline and subsquently —after 2000—as a replacement. California is shooting right now for a 30% substitution of methanol for gasoline over the next decade or so.

What gives this a here-and-now concept is the recent announcement by the state of California and Arco that the oil company will begin marketing a methanol motor fuel at 75 of its stations within the next three years. It will start with five this year, add 20 next year and the balance in 1989. There already are 30 or so subsidized independents selling methanol, and Chevron also is considering an Arco-like deal with the state, leaving little doubt that this is just the beginning.

Big company participation could be just the wallop needed to get methanol rolling as a motor fuel in California. And given California's reputation as a pace setter in things automotive and environmental, the current pacts could be harbingers for all other states.

California also has proposed financial help for the purchase of 5,000 methanol-fueled vehicles and is hopeful that as many as 100,000 might be on its streets and highways by 1991 or 1992. Although this is a mere trickle considering that Californians currently are buying about 1.8-million new cars a year, who can foresee what kind a boom this might touch off? A factor to be reckoned with, too, is that the state is splitting the service station installation costs with Arco and likely will do the same with Chevron, if that agreement is reached in the near future. That could be an inducement for others to jump in. Arco expects to sell the new methanol fuel at about 90¢ a gal., which would make it a low-ball competitor with today's prices. It is presumed that this projected retail price would move up or down in keeping with the pump prices of the future, not of the present.

Moreover, the automobile companies have not been entirely remiss in the methanol field. Most are working on engines that can burn methanol straight. As a matter of fact, Ford is said to have a flexible prototype that can use methanol, gasoline or a combination of both. Some cities also are field-testing bus and fleet models that consume methanol-type fuels. At the federal level, several Congressmen are said to be ready with incentive proposals for methanol fuels.

These developments, however, do not presage an end to petroleum marketing as an industry in the foreseeable future—just a change of products and procedures, something marketers are accustomed to. *—J. Richard Shaner*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

APRIL	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$ .940	$ .879	$ .934	$1.073
Regions:				
Northeast	.941	.867	.916	1.062
North Central	.931	.883	.932	1.073
South	.932	.865	.924	1.062
West	.959	.896	.961	1.110

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	5/29/87	5/30/86
Gasoline (total)	231,427	219,131
Gasoline (Unleaded)*	134,777	115,181
Jet Kerosine	39,391	38,211
Distillates	99,327	97,775
Residual	40,724	36,958

**Included in gasoline total.*
Source: American Petroleum Institute.

High Fuel Taxes Tugging Hard On Motorists' Purse Strings

Motor fuel tax increases were enacted in eight states this year, according to the Highway Users Federation, which adds that fuel taxes will also go up in two other states due to previous legislation. Moreover, 14 other states are now considering similar action.

The tax increases were enacted in: Maryland and Utah (gasoline and diesel up 5¢); Missouri and North Dakota (gasoline and diesel up 4¢); Montana (gasoline and diesel up 3¢); Mississippi (gasoline up 6¢ and diesel up 5¢); Oklahoma (gasoline up 6¢ and diesel up 3¢) and New Mexico (gasoline up 3¢ and diesel up 5¢). Tax increases based on earlier legislation go into effect this month in Connecticut (gasoline and diesel up 1¢) and Tennessee (diesel up 1¢).

Motor fuel tax hikes were defeated in Georgia, Idaho, Indiana, South Dakota and West Virginia.

The average state gasoline tax has risen 56% from 8.6¢ a gal. in 1980 to a current 13.4¢. The federal gasoline tax was raised from 4¢ to 9¢ gal. in 1983, a 125% increase. In addition, drivers in 11 states pay a percentage of sales tax on motor fuel and 13 states allow local governments to place their own motor fuel taxes on top of the states'.

Motorists also pay 9¢ per gallon federal gasoline tax, which goes into the Highway Trust Fund for major highway improvements. Gasohol users pay only 3¢ a gal. in federal taxes, the remaining 6¢ being a subsidy to the ethanol industry.

Senate Finance Committee Chairman Lloyd Bentsen (D-Texas) says lawmakers are looking at increases in gasoline taxes, excise taxes and income taxes to reduce the budget deficit, although President Reagan has vowed to veto any increase in individual tax rates.

Specifically, excise and gasoline tax increases are being considered to raise $18-billion under the budget resolution.

The PMAA vehemently opposes such tax increases. "The petroleum industry has always had to carry the tax burden. If Congress is going to impose taxes they should be across-the-board taxes on all energy sources, not just petroleum products," says a PMAA spokesman.

PMAA is against any energy tax. SIGMA says an excise tax or a gasoline tax hike would be preferable to an oil import fee.

A 10¢ increase in the federal gasoline tax would raise about $9-billion a year, according to Congressional estimates. The proposed legislation has some support in the House.

While Bentsen says an income tax increase is not "off limits," such a measure faces stiff opposition not only from President Reagan, but from House Ways and Means Chairman Dan Rostenkowski (D-Ill.), who adamantly opposes "tampering" with tax rates after last year's tax law.

State Motor Fuel Tax Rates

(cents per gal.)

State	Gasoline	Diesel	Gasohol	Added Tax (%)	Local Option
Alabama	13	14	10		yes
Alaska	8	8	0		
Arizona	16	16	16		
Arkansas	13.5	12.5	13.5		
California	9	9	9	6	yes
Colorado	18	20.5	18		
Connecticut	17	17	16	2	
Delaware	13	13	13		
D.C.	15.5	15.5	15.5		
Florida*	9.7	9.7	7.7		yes
Georgia	7.5	7.5	7.5	3	
Hawaii	11	11	11	4	yes
Idaho	14.5	14.5	10.5		
Illinois	13	15.5	13	6	yes
Indiana	14	15	14	5	
Iowa	16	18.5	15		
Kansas*	11	13	8		
Kentucky*	15	12	15		
Louisiana	16	16	16	1	
Maine	14	14	11		
Maryland*	13.5	13.5	13.5		
Massachusetts*	11	11	11		
Michigan*	15	15	15	4	
Minnesota	17	17	14.5		
Mississippi	9	10	9	6	yes
Missouri	7	7	7		
Montana	17	17	17		
Nebraska*	19	19	16		
Nevada	13	13	12		yes
New Hampshire	14	14	14		
New Jersey	8	11	0		
New Mexico	11	11	0		yes
New York	8	10	8	6.75	yes
North Carolina*	15.75	15.75	15.75		
North Dakota	13	13	5		
Ohio	12	12	12		
Oklahoma	16	13	10		
Oregon	12	12	12		yes
Pennsylvania	12	12	12	6	
Rhode Island*	15	15	15		
South Carolina	13	13	7		
South Dakota	13	13	11		yes
Tennessee	17	15	13		yes
Texas	15	15	11		
Utah	19	19	19		
Vermont	13	14	13		
Virginia	17.5	16	17.5		yes
Washington	18	18	16.2		
West Virginia*	15.35	15.35	15.35		
Wisconsin*	18	18	18		
Wyoming	8	8	8		
Average Gasoline Tax	**13.4**				

*Variable tax expressed in cents per gal.

Source: Highway Users Federation, rates effective July 1, 1987.

Note: Federal Excise Tax on gasoline is an additional 9¢ gal.

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Ranking The Top 25 Marketing Companies

	Total Assets		Gross Revenues		Net Income		Sales Ranking Among Top 500	
	1986	1985	1986	1985	1986	1985	1986	1985
Exxon	1	1	1	1	1	1	2	2
Mobil	2	2	2	2	2	6	5	3
Texaco	3	4	3	3	5	5	8	6
Chevron	4	3	4	4	6	4	10	7
Shell	5	5	6	6	4	3	15	14
Amoco	6	6	5	5	3	2	13	11
Arco	7	8	7	7	7	19	20	12
Tenneco	8	7	8	9	13	17	21	18
Standard	9	9	11	11	21	10	33	24
Conoco (a)	10	10	NA	NA	NA	NA	NR	NR
Phillips	11	11	9	8	9	8	31	17
Sun	12	12	10	10	8	7	33	20
Unocal	13	13	12	12	11	9	48	31
Marathon (b)	14	14	NA	NA	NA	NA	NR	NR
Coastal	15	15	14	15	12	12		
Amerada Hess	16	16	15	14	15	20	92	48
Ashland	17	18	13	13	10	11	54	46
Diamond Shamrock	18	17	16	16	18	21	130	93
Pennzoil	19	19	19	20	13	14	100	167
Kerr-McGee	20	21	17	17	20	13	152	117
Murphy	21	20	20	19	19	15	247	169
American Petrofina	22	22	18	18	16	18	182	157
Citgo (c)	23	23	NA	NA	NA	NA	NR	NR
Getty	24	24	21	21	14	16	NR	NR
Cumberland (d)	25	25	NA	NA	NA	NA	NR	NR

(a) Conoco is a subsidiary of Du Pont and does not disclose financial data; (b) Marathon is a subsidiary of USX Corp. and does not disclose financial data; (c) Citgo is a subsidiary of Southland Corp. and provides only limited financial data; (d) Cumberland Farms is family-owned and does not disclose financial data; NR means Not Ranked by Fortune 500, which is the source of this ranking column.

Exxon's Long Asset Shadow: 76% Greater Than 2nd Place Mobil

With assets of $69.5-billion at the end of 1986, Exxon Corp. is by far the biggest of the score or so of megabuck companies that supply U.S. consumers with most of their gasoline, heating oil and other petroleum products.

Mobil is the industry's second largest in terms of assets but even with $39.4-billion in its favor, it's still only about half the size of the titan of them all. Texaco slipped past Chevron in 1986 and now ranks third. Its assets are listed at $34.9-billion and Chevron's at $34.8-billion. Shell, which became the country's leading gasoline marketer last year (See Share of Market section) ranked fifth, with assets of $26.2-billion.

The erosion of Chevron, which had been the No. 1 gasoline marketer prior to Shell's takeover, is interesting but not necessarily surprising.

Chevron had been ranked about fifth in size in 1984 when it bought Gulf Oil Corp. for $13-billion, still the biggest single acquisition in the nation's history, bar none. That achievement enabled Chevron to vault to second place in size and to take over leadership in the annual gasoline gallonage derby.

Forced by law to divest itself of properties in the Southeast and pressed into retreat in the bitterly competitive Northeast, however, Chevron's total assets shrank in 1984 by a restatement of its Gulf acquisition, then again in 1986 to $34.9-billion, its second big decline in three years.

Exxon, Arco and Pennzoil were the only companies that appeared to have improved their asset structures in 1986. Exxon rose 0.5%, Arco 6.5% and Pennzoil 2.1%. Exxon, however, was the only one that had maintained the growth pattern of the 1980s. Arco and Pennzoil sustained breaks in their chains (See related story on next page).

(continued on next page)

Oil Company Assets—1981-1986

	Ranking		(in billions of dollars) Assets		% Chng.
	1986	1985	1986	1985	'86 vs '85
Exxon	1	1	**$69,484(c)**	$69,160	0.5%
Mobil	2	2	39,412	41,752	(5.6)
Texaco	3	4	34,940	37,703	(7.3)
Chevron	4	3	34,853	38,889	(11.1)
Shell	5	5	26,214	**26,528**	(1.2)
Amoco	6	6	23,70[illegible]	25,198	(15.9)
Arco	7	8	21,603	20.279	6.5
Tenneco	8	7	18,021	**20,437**	(11.8)
Standard	9	9	15,955	**18,330**	(13.0)
Conoco	10	10	13,000	**14,115**	(7.9)
Phillips	11	11	12,399	14,045	(11.7)
Sun	[illegible]	12	11,684	**12,923**	(9.6)
Unocal	[illegible]	13	10,133	**10,797**	(6.2)
Marathon	14	14	9,184	10,074	(8.8)
Coastal	15	15	7,877	**8,258**	(4.5)
Amerada Hess	16	16	4,914	6,219	(21.0)
Ashland	17	18	3,805	3,928	(3.1)
Diamond Shamrock	18	17	3,517	4,618	(23.8)
Pennzoil	19	19	3,369	3,300	2.1
Kerr-McGee	20	21	3,090	3,702	(16.5)
Murphy	21	20	1,980	2,661	(25.6)
American Petrofina	22	22	1,777	**1,817**	(2.2)
Citgo	23	23	1,210	1,274	(5.0)
Getty	24	24	(a)	(a)	
Cumberland	25	25	(b)	(b)	

(a) Getty Petroleum's assets were below $1-billion but were included in this table for an approximate ranking.
(b) Cumberland Farms does not disclose financial data but was included in this table for approximately ranking.
(c) All boldface totals indicate individual company peak years.

(Asset Values, continued . . .)

Ten of the score or so multi-billion companies appeared to have hit their asset peaks—at least for the time being—in 1985 and 1984. Two have to go back to 1982 to find their financial high water marks (See related table).

A more startling comparison is that again, with the exception of Exxon, all of the top companies reported their 1986 assets were down significantly versus their peak years. Some can attribute this to the wrenching cutbacks in the wake of the collapse of crude and product marketplaces last year. Some can blame attritional processes as well as spinoffs of assets.

Some companies, Phillips and Unocal particularly, were forced to sell selected assets as a result of the havoc caused by corporate raiders. Others, like Chevron and Texaco, which inflated their sizes with big merger bites (Gulf and Getty, for example) were ordered by the courts to divest some of their assets to equalize competitive factors.

Another interesting sidelight to the current rankings of companies by assets is the reemergence of both Conoco and Marathon Petroleum. After Conoco was acquired by Du Pont and Marathon by U.S. Steel (now known as USX Corp.) their sales figures, earnings and other vital statistics were rolled into the corporate reports, thus circumscribing the traditional financial materials and making comparisons impossible.

The asset data are once again available for both so they now can be included in the listings of the top 25 marketing companies. Conoco ranks 10th in oil assets and Marathon, 14th.

Limited data on other big independent marketers are now available too, including Citgo, which is Southland's marketing division; Cumberland Farms, whose purchase of a Chevron-Gulf empire in the Northeast made it the nation's biggest independent market of gasoline, and Getty Petroleum, the second biggest independent. Southland nominally would outrank Getty as an independent gasoline marketer and perhaps Cumberland too, but since it also has a refinery, its status is different—that of a refiner-marketer rather than a "pure" independent.

In addition to stunting asset growth in 1986, the stunning collapse of crude and product prices also produced another major change in historic ratings and rankings.

Only two companies—Exxon and Mobil—earned more than $1-billion last year compared with six the year before. In bygone years there were as many as 10 to 12 in this exclusive "billionaire's club." Those who fell by the wayside in 1986 were Chevron, Amoco, Shell and Standard, formerly Sohio.

—The Top 25 Marketers

Ranking		(in billions of dollars) Assets		% Chng.	% Chng.	(in billions of dollars) Assets	
1984	1983	1984	1983	'85 vs '84	'84 vs '83	1982	1981
1	1	$63,278	$62,963	9.3%	0.5%	$62,289	$61,548
3	2	**41,851**	37,022	0.2	19.3	35,216	34,776
4	3	**37,774**	27,199	(0.1)	38.7	27,114	27,489
2	5	**45,404**	24,010	(14.3)	89.1	23,490	23,680
6	7	23,729	22,169	11.8	7.0	21,376	20,118
5	4	25,734	**25,805**	(2.1)	0.3	24,289	22,964
7	6	21,952	**23,282**	(7.6)	(4.9)	21,633	19,733
8	8	18,205	17,994	12.3	1.2	17,378	16,808
9	9	17,487	16,362	4.8	6.9	16,016	15,743
11	NR	13,497	NA	4.6	NA	NA	NA
10	10	**16,955**	13,094	(17.2)	29.6	12,097	11,264
12	11	12,789	12,466	1.1	2.5	11,850	11,822
13	12	10,203	9,288	5.8	10.6	8,511	7,592
14	13	9,949	9,332	1.3	6.6	9,624	5,933
18	19	3,295	3,338	150.6	1.3	3,225	3,182
15	14	**6,353**	6,217	(2.1)	2.2	6,145	6,322
17	16	4,037	4,108	(2.5)	1.7	**4,210**	4,122
16	15	5,396	**6,024**	(14.4)	(10.4)	3,194	3,016
20	19	3,243	**3,517**	1.8	(7.8)	3,226	2,999
19	18	3,771	**3,806**	(16.5)	0.9	3,762	3,415
21	20	2,685	2,792	(10.9)	(3.8)	**2,990**	2,777
22	21	1,706	1,399	6.5	21.9	1,166	1,146
23	22	1,246	1,392	2.2	(10.5)	1,397	**6,049**
NR	NR	(a)	(a)	—	—	(a)	(a)
NR	NR	(b)	(b)	—	—	(b)	(b)

Assets—Peak Years vs. 1986

(Billions of Dollars)

	Peak Year	Peak Year Total	1986	% Change
Amer.-Hess......	1984	$ 6,353	$ 4,914	(22.7%)
Amer.-Petrofina..	1985	1,817	1,777	(2.2)
Amoco..........	1983	25,805	23,706	(8.1)
Ashland.........	1982	4,210	3,805	(9.6)
Arco............	1983	23,282	21,603	(7.2)
Coastal.........	1985	8,258	7,877	(4.6)
Chevron.........	1984	45,404	34,583	(23.8)
Citgo...........	1981	6,049	1,777	(70.6)
Conoco.........	1985	14,115	13,000	(7.9)
Dia. Shamrock...	1983	6,024	3,517	(41.6)
Exxon...........	1986	69,484	69,484	0.0
Kerr-McGee.....	1983	3,806	3,090	(18.8)

(Billions of Dollars)

	Peak Year	Peak Year Total	1986	% Change
Marathon........	1985	$10,074	$ 9,184	(8.8%)
Mobil...........	1984	41,851	39,412	(5.8)
Murphy.........	1982	2,990	1,980	(33.8)
Pennzoil........	1983	3,517	3,369	(4.2)
Phillips..........	1984	16,955	12,399	(26.9)
Shell............	1985	26,528	26,214	(1.2)
Standard........	1985	18,330	15,955	(13.0)
Sun.............	1985	12,923	11,684	(9.6)
Tenneco.........	1985	20,437	18,021	(11.8)
Texaco..........	1984	37,774	34,940	(7.5)
Unocal..........	1985	10,797	10,133	(6.1)

Oil Company 1986 Annual Reports

Financial

	Gross Sales-Operating Revenues (add 000)			Net Income (add 000)			Net Income % of Gross Sales	
	1986	1985	% Change	1986	1985	% Change	1986	1985
Amerada Hess Corp.	$4,062,255	$7,722,542	(47.4%)	(219,443)	(260,409)	—	—	—
American Petrofina	1,960,030	2,408,502	(18.6)	(24,569)	(10,163)	—	—	—
Amoco Corp.	18,281,000	26,922,000	(32.1)	747,000	1,953,000	(61.7)	4.1%	7.3%
Ashland Oil, Inc.	6,991,262	7,891,223	(11.4)	208,571	146,722	42.2	3.0	1.9
Atlantic Richfield Co.	14,487,000	21,723,000	(33.7)	615,000	(202,000)	—	4.2	—
Chevron Corp.	24,351,000	41,742,000	(41.7)	715,000	1,547,000	(53.8)	2.9	3.7
Citgo Petroleum Corp.	4,132,129	5,716,024	(27.7)	43,578	39,291	10.9	1.1	.7
Coastal Corp.	6,668,200	7,274,800	(8.0)	71,600	142,400	(49.7)	1.1	2.0
Conoco, Inc.	11,785,344	15,378,539	(23.4)	324,628	468,745	(30.7)	3.0	3.0
Diamond Shamrock Corp.	1,673,300	2,254,600	(25.8)	(64,800)	(16.1)	—	—	—
Exxon Corp.	76,555,000	92,869,000	(17.6)	5,360,000	4,870,000	10.1	7.0	5.2
Getty Petroleum Corp.	953,152	1,334,951	(28.6)	17,104	11,455	48.7	1.8	.9
Marathon Oil Corp.	7,026,000	9,603,000	(26.9)	73,000 (a)	1,274,000 (a)	(942.7)	—	—
Mobil Oil Corp.	49,865,000	60,609,000	(17.7)	1,407,000 (c)	1,040,000 (d)	35.3	2.8 (c)	1.8 (d)
Murphy Oil Corp.	1,313,283	2,197,638	(40.2)	(194,750)(b)	79,704	—	—	3.6
Phillips Petroleum Corp.	10,015,000	15,800,000	(36.6)	234,000	596,000	(60.7)	2.3	2.6
Shell Oil Corp.	17,353,000	20,477,000	(15.3)	833,000	1,650,000	(49.5)	4.8	8.1
Standard Oil Co. (Ohio)	10,022,000	13,818,000	(27.5)	(311,000)	308,000	—	—	2.2
Sun Co., Inc.	9,376,200	13,769,000	(31.9)	385,000	527,000	(27.3)	4.1	3.8
Tenneco Inc.	14,529,000	15,244,000	(4.7)	139,000	171,000	(18.7)	1.0	1.1
Texaco Inc.	32,591,000	47,514,000	(31.4)	725,000	1,233,000	(41.2)	2.2	2.6
Unocal Corp.	7,482,000	10,738,000	(31.1)	176,000	325,000	(45.8)	2.4	3.0

(a) Operating income

(b) After write-down in stated values of certain assets of $228,760,000 (net of taxes and minority interest)

(c) Income for 1986 includes the $150 million loss on the sale of Container Corp. of America.

(d) The presentation for 1985 has been revised to conform with guidance issued by the Securities Exchange Commission in 1986 to include the $508 million provision for restructuring of Montgomery Ward.

Operating

	Net Crude Production b/d				Refinery Crude Runs b/d				Domestic Refined Product Sales	
	Domestic		Foreign		Domestic		Foreign			
	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985
Amerada Hess Corp.	65,877	67,109	83,638	95,073	293,000	337,000	—	—	358,000	417,000
American Petrofina	(c)	18,548	—	—	(c)	117,277	—	—	(c)	166,129
Amoco Corp.	394,000	401,000	416,000	446,000	855,000	839,000	59,000	60,000	936,000	911,000
Ashland Oil, Inc.	2,835	2,755	30,750	20,781	321,702	297,458	0	0	370,587	359,633
Atlantic Richfield Co.	659,100	647,700	74,600	62,100	374,200	353,200	—	—	391,100	374,900
Chevron Corp.	546,200	566,000	400,600	418,700	1,335,100	1,358,100	464,800	597,800	1,547,000	1,683,000
Citgo Petroleum Corp.	—	—	—	—	66,500	80,000	171,000	123,900	5,061,000	4,679,000
Coastal Corp.	11,149	14,092	—	—	245,500	195,000	—	—	203,560	159,178
Conoco, Inc.	127,578	119,254	316,625	305,306	377,421	364,445	138,393	131,693(a)	452,983	425,646
Diamond Shamrock Corp.	—	—	—	—	131,447	124,838	—	—	161,177	149,653
Exxon Corp.	761,000	768,000	953,000	884,000	1,080,000	1,054,000	1,952,000	1,849,000	1,106,000	1,123,000
Getty Petroleum Corp.	—	—	—	—	—	—	—	—	—	—
Marathon Oil Corp.	155,000	160,200	89,000(b)	115,100(b)	442,200	402,700	49,300	49,500	514,491	470,510
Mobil Oil Corp.	342,000	352,000	357,000	397,000	643,000	647,000	902,000	943,000	841,000	789,000
Murphy Oil Corp.	15,897	13,610	37,367	41,484	82,369	76,622	21,474	19,907	88,044	86,238
Phillips Petroleum Corp.	316,000	346,000	124,000	139,000	301,000	292,000	—	—	513,000	528,000
Shell Oil Corp.	499,000	463,000	51,000	39,000	975,000	890,000	—	—	1,173,000	953,000
Standard Oil Co. (Ohio)	726,600	719,700	0	0	622,800	597,500	0	0	644,500	604,200
Sun Co., Inc.	171,300	195,100	31,500	30,000	416,100	391,700	60,400	62,200	540,400	528,800
Tenneco Inc.	91,788	93,311	39,007	38,368	126,759	98,688	—	—	167,050	146,112
Texaco Inc.	520,000	640,000	556,000	698,000	920,000	838,000	1,014,000	1,010,000	1,227,000	1,155,000
Unocal Corp.	168,000	170,000	94,000	97,000	404,000	363,000	—	—	442,000	420,000

(a) Restated 1985

(b) Tanker liftings of equity crude

(c) 1986 figures not yet available

Quarterly and Full-Year Earnings— 1986 vs. 1985

(Add 000,000)

	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Full-Year 1986	Full-Year 1985	% Change
Exxon	$1,710.0	$1,115.0	$1,055.0	$1,480.0	$5,360.0	$4,870.0	10.1%
Mobil	440.0	582.0	182.0	201.0	1,405.0	1,040.0	35.1
Chevron	356.0	216.0	208.0	(86.0)	715.0	1,547.0	(53.8)
Texaco	328.0	185.0	162.0	50.0	725.0	1,230.0	(41.1)
Shell	276.0	219.0	133.0	254.0	883.0	1,650.0	(46.7)
Amoco	331.0	238.0	13.0	165.0	747.0	1,953.0	(61.8)
Tenneco	124.0	80.0	(246.0)	3.0	(39.0)	(1.0)	—
Arco	288.0	150.0	102.0	64.0	615.0	(202.0)	—
Standard Oil	253.0	(681.0)	52.0	31.0	(345.0)	308.0	—
Phillips	96.0	8.0	113.0	11.0	228.0	418.0	(45.5)
Sun	146.0	100.0	69.0	70.0	385.0	527.0	(26.9)
Unocal	70.2	34.6	21.8	49.2	175.8	325.1	(45.9)
Amerada Hess	(339.3)	19.7	41.8	58.3	(219.4)	(260.4)	—
Dia. Shamrock	(10.0)	34.5	(97.9)	(42.2)	(115.6)	(604.7)	—
Ashland (*)	39.0	80.2	34.3	27.2	—	—	—
Kerr-McGee	22.1	3.2	(325.8)	8.8	(291.7)	136.5	—
Pennzoil	42.3	25.2	(10.1)	46.5	45.4	113.9	(59.9)
Murphy	10.9	2.6	(0.5)	(207.8)	(194.8)	79.7	—
American Fina	(39.7)	4.4	5.7	5.0	(24.6)	(10.2)	—

Downstream Earnings: The Silver Lining 1986 vs. 1985

(Add 000,000)

	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Full-Year 1986	Full-Year 1985	% Change
Exxon (total)	$607.0	$573.0	$460.0	$336.0	$1,976.0	$872.0	126.6%
domestic	160.0	197.0	106.0	17.0	480.0	229.0	109.6
foreign	447.0	376.0	354.0	319.0	1,496.0	643.0	132.7
Mobil (total)	255.0	464.0	321.0	254.0	1,294.0	333.0	292.1
domestic	51.0	170.0	80.0	65.0	366.0	157.0	133.1
foreign	204.0	294.0	241.0	189.0	928.0	176.0	427.3
Chevron (total)	158.0	229.0	207.0	46.0	689.0	490.0	40.6
domestic	37.0	121.0	130.0	(128.0)	209.0	321.0	(34.9)
foreign	121.0	108.0	77.0	174.0	480.0	169.0	184.0
Texaco							
worldwide	301.0	322.0	212.0	(10.0)	825.0	276.0	198.9
Shell							
domestic	61.0	76.0	78.0	35.0	319.0	269.0	18.6
Amoco							
worldwide	19.0	173.0	133.0	37.0	362.0	262.0	38.2
Arco							
domestic	89.0	121.0	94.0	48.0	353.0	262.0	34.8
Standard Oil							
domestic	10.0	149.0	174.0	108.0	436.0	351.0	24.2
Phillips (total) (**)	118.0	150.0	126.0	75.0	458.0	342.0	33.9
domestic	98.0	155.0	128.0	72.0	443.0	327.0	35.5
foreign	20.0	(5.0)	(2.0)	3.0	15.0	15.0	—
Sun							
domestic	68.0	111.0	29.0	(7.0)	201.0	128.0	57.0
Amerada Hess	(374.4)	—	51.4	37.0	N.A.	N.A.	—
Ashland (*) (**)	59.9	131.9	70.0	21.9	—	—	—
Kerr-McGee	(2.4)	7.3	1.0	8.3	13.2	24.7	(46.6)

(*) Ashland is 1st Qtr. on both tables; fiscal ends 9/30.
(**) Operating and pre-tax, not net.

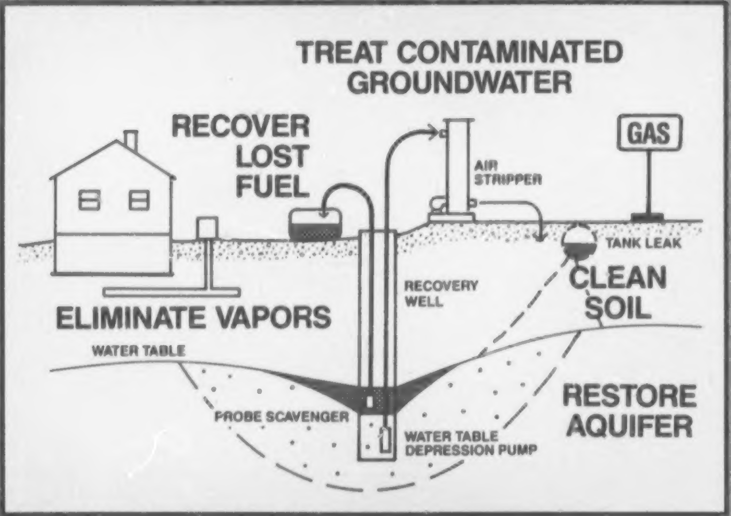
How Oil Spends Its TV Money

Network TV Spending

Company	1985 (Add 000)	1986 (Add 000)	% Change
Burmah (Castrol)	$7,793	$8,288	+ 6%
Ashland	7,154	7,599	+ 6
Phillips	8,343	6,933	−17
Quaker State	7.270	6,209	−15
Texaco	3,139	4,326	+38
Pennzoil	4,331	3,063	−29
Mobil	3,036	3,040	+ 1
Unocal	1,525	1,836	−20%
Goodwrench Motor Oil (GM)	2,029	1,215	−40
Witco (Kendall)	843	1,099	+30
Sun	2,328	504	−78
Chevron	436	319	−27

Source: Television Bureau of Advertising from Broadcast Advertisers Reports data 1986.

UNDERGROUND LEAK PROBLEMS?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Spot TV Spending

Company	1986 (Add 000)	1985 (Add 000)	% Change
Chevron	$16,953	$15,516	+ 9
Amoco	13,746	9,024	+ 52
Exxon	13,189	16,002	− 18
Texaco	8,305	5,023	+ 65
Mobil	8,295	9,238	− 10
Unocal	7,250	4,812	+ 51
Shell	6,795	15,055	− 55
Atlantic Richfield	6,064	2,174	+179
Ashland	4,829	3,368	+ 43
Pennzoil	4,772	4,948	− 4
Sun	4,076	3,720	+ 10
Burmah (Castrol)	2,664	958	+178
Standard Oil	1,684	2,757	− 39
Phillips	1,631	1,242	+ 31
Witco (Kendall)	1,213	1,304	− 7
Conoco	1,182	1,428	− 17
Citgo (Southland)	1,094	676	+ 62
Amerada Hess	949	1,355	− 30
Getty	932	596	+ 56
Quaker State	926	1,311	− 29

Source: Television Bureau of Advertising from Broadcast Advertisers Reports 1986.

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Heart disease
doesn't have to be.

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ASSOCIATION
MEMORIAL PROGRAM.

WE'RE FIGHTING FOR YOUR LIFE
American Heart Association

This space provided as a public service.

Current Automotive Registrations

	Automobiles			Trucks and Buses			All Motor Vehicles			Motorcycles
State	Registered 1985	Estimated 1986	% Chng.	Registered 1985	Estimated 1986	% Chng.	Registered 1985	Estimated 1986	% Chng.	Estimated 1986
Alabama	2,343,261	2,417,000	3.1	994,570	1,044,000	5.0	3,337,831	3,461,000	3.7	58,000
Alaska	219,590	217,000	−1.2	133,425	131,000	−1.8	353,015	348,000	−1.4	9,000
Arizona	1,582,722	1,662,000	5.0	652,299	691,000	5.9	2,235,021	2,353,000	5.3	84,000
Arkansas	900,065	939,000	4.3	483,634	496,000	2.6	1,383,699	1,435,000	3.7	30,000
California	14,723,189	15,384,000	4.5	4,176,032	4,319,000	3.4	18,899,221	19,703,000	4.3	677,000
Colorado	2,016,522	2,027,000	0.5	742,356	742,000	0.0	2,758,878	2,769,000	0.4	107,000
Connecticut	2,306,432	2,377,000	3.1	158,418	160,000	1.0	2,464,850	2,537,000	2.9	58,000
Delaware	369,407	383,000	3.7	95,684	102,000	6.6	466,091	485,000	4.3	11,000
Dist. of Col.	308,343	328,000	6.4	18,009	17,000	−5.6	326,352	345,000	5.7	4,000
Florida	7,849,144	8,142,000	3.7	2,015,691	2,207,000	9.5	9,864,835	10,349,000	4.9	226,000
Georgia	3,358,953	3,375,000	0.5	1,221,067	1,311,000	7.4	4,580,020	4,686,000	2.3	115,000
Hawaii	569,086	589,000	3.5	81,793	83,000	1.5	650,879	672,000	3.2	18,000
Idaho	531,854	528,000	−0.7	321,785	334,000	3.8	853,639	862,000	1.0	48,000
Illinois	6,104,331	6,137,000	0.5	1,622,407	1,648,000	1.6	7,726,738	7,785,000	0.8	221,000
Indiana	2,988,820	3,035,000	1.5	1,035,212	1,055,000	1.9	4,024,032	4,090,000	1.6	130,000
Iowa	1,937,601	1,988,000	2.6	758,191	776,000	2.3	2,695,792	2,764,000	2.5	274,000
Kansas	1,474,205	1,490,000	1.1	673,718	681,000	1.1	2,147,923	2,171,000	1.1	94,000
Kentucky	1,773,567	1,777,000	0.2	841,200	864,000	2.7	2,614,767	2,641,000	1.0	38,000
Louisiana	2,067,013	2,079,000	0.6	945,077	975,000	3.2	3,012,090	3,054,000	1.4	55,000
Maine	620,473	641,000	3.3	219,538	220,000	0.2	840,011	861,000	2.5	44,000
Maryland	2,720,700	2,771,000	1.8	556,013	588,000	5.9	3,275,713	3,359,000	2.5	63,000
Massachusetts	3,268,503	3,264,000	−0.1	469,547	473,000	0.7	3,738,050	3,737,000	0.0	124,000
Michigan	5,356,975	5,762,000	7.6	1,369,703	1,425,000	4.0	6,726,678	7,187,000	6.8	214,000
Minnesota	2,625,831	2,744,000	4.5	759,500	804,000	5.9	3,385,331	3,548,000	4.8	175,000
Mississippi	1,329,424	1,375,000	3.4	416,532	435,000	4.4	1,745,956	1,810,000	3.7	25,000
Missouri	2,622,141	2,648,000	1.0	935,728	945,000	1.0	3,557,869	3,593,000	1.0	78,000
Montana	394,510	382,000	−3.2	257,672	246,000	−4.5	652,182	628,000	−3.7	24,000
Nebraska	835,785	842,000	0.7	421,404	420,000	−0.3	1,257,189	1,262,000	0.4	40,000
Nevada	511,760	502,000	−1.9	197,669	194,000	−1.9	709,429	696,000	−1.9	18,000
New Hampshire	813,600	854,000	5.0	160,293	165,000	2.9	973,893	1,019,000	4.6	66,000
New Jersey	4,413,999	4,428,000	0.3	495,367	498,000	0.5	4,909,366	4,926,000	0.3	128,000
New Mexico	746,068	732,000	−1.9	429,633	423,000	−1.5	1,175,701	1,155,000	−1.8	41,000
New York	7,901,004	8,185,000	3.6	1,140,821	1,188,000	4.1	9,041,825	9,373,000	3.7	253,000
North Carolina	3,247,486	3,314,000	2.0	1,202,897	1,222,000	1.6	4,450,383	4,536,000	1.9	67,000
North Dakota	381,200	376,000	−1.4	273,927	273,000	−0.3	655,127	649,000	−0.9	29,000
Ohio	6,746,339	6,972,000	3.3	1,355,273	1,359,000	0.3	8,101,612	8,331,000	2.8	279,000
Oklahoma	1,854,553	1,915,000	3.3	1,009,195	1,000,000	−0.9	2,863,748	2,915,000	1.8	105,000
Oregon	1,560,345	1,561,000	0.0	643,340	662,000	2.9	2,203,685	2,223,000	0.9	84,000
Pennsylvania	5,889,416	5,980,000	1.5	1,319,677	1,360,000	3.1	7,209,093	7,340,000	1.8	215,000
Rhode Island	518,896	517,000	−0.4	91,178	98,000	7.5	610,074	615,000	0.8	27,000
South Carolina	1,683,435	1,715,000	1.9	538,163	561,000	4.2	2,221,598	2,276,000	2.4	39,000
South Dakota	404,220	429,000	6.1	246,132	248,000	0.8	650,352	677,000	4.1	35,000
Tennessee	2,944,971	3,070,000	4.2	808,955	844,000	4.3	3,753,926	3,914,000	4.3	105,000
Texas	8,562,581	8,606,000	0.5	3,881,606	4,006,000	3.2	12,444,187	12,612,000	1.3	273,000
Utah	739,627	733,000	−0.9	359,170	372,000	3.6	1,098,797	1,105,000	0.6	52,000
Vermont	301,435	315,000	4.5	96,173	103,000	7.1	397,608	418,000	5.1	21,000
Virginia	3,641,696	3,838,000	5.4	611,599	625,000	2.2	4,253,295	4,463,000	4.9	84,000
Washington	2,484,484	2,652,000	6.7	1,041,878	1,115,000	7.0	3,526,362	3,767,000	6.8	136,000
West Virginia	818,678	860,000	5.0	361,768	379,000	4.8	1,180,446	1,239,000	5.0	32,000
Wisconsin	2,457,806	2,528,000	2.9	729,185	753,000	3.3	3,186,991	3,281,000	2.9	206,000
Wyoming	286,113	286,000	0.0	213,465	221,000	3.5	499,583	507,000	1.5	19,000
TOTAL	**132,108,164**	**135,671,000**	**2.7**	**39,582,569**	**40,861,000**	**3.2**	**171,690,733**	**176,532,000**	**2.8**	**5,358,000**

Source: Federal Highway Administration, Table SS85-3, published October 1986.

Estimated Licensed Drivers, By Sex and States, 1985 and 1986

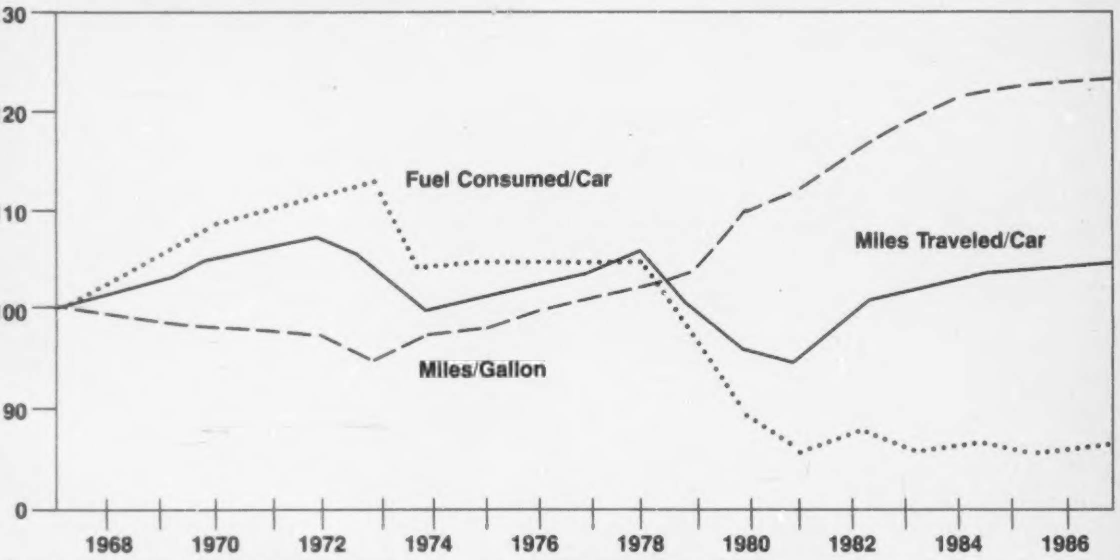
(Add 000)

	1985 (Actual)				1986 (Estimated)		
State	Male	Female	Total	% Male Drivers	Male	Female	Total
Alabama	1,280	1,182	2,462	51.98	1,291	1,193	2,484
Alaska	169	131	300	56.24	170	132	302
Arizona	1,258	1,066	2,324	54.12	1,296	1,098	2,394
Arkansas	888	836	1,724	51.52	910	857	1,767
California	9,198	8,247	17,445	52.72	9,396	8,426	17,822
Colorado	1,221	1,063	2,284	53.47	1,234	1,073	2,307
Connecticut	1,189	1,125	2,315	51.38	1,200	1,135	2,335
Delaware	229	219	448	51.03	232	222	454
Dist. of Col.	211	173	385	54.96	217	177	394
Florida	4,134	3,882	8,016	51.57	4,171	3,917	8,088
Georgia	2,006	1,904	3,910	51.30	2,030	1,927	3,957
Hawaii	326	268	594	54.85	331	273	604
Idaho	360	332	692	51.98	367	339	706
Illinois	3,486	3,464	6,950	50.16	3,524	3,502	7,026
Indiana	1,828	1,769	3,598	50.82	1,838	1,778	3,616
Iowa	933	968	1,901	49.10	922	956	1,878
Kansas	830	826	1,656	50.10	828	824	1,652
Kentucky	1,175	1,073	2,249	52.26	1,188	1,085	2,273
Louisiana	1,424	1,332	2,756	51.67	1,441	1,348	2,789
Maine	406	398	804	50.52	413	404	817
Maryland	1,497	1,411	2,907	51.48	1,521	1,433	2,954
Massachusetts	1,966	1,826	3,792	51.84	1,982	1,842	3,824
Michigan	3,176	3,078	6,254	50.78	3,203	3,104	6,307
Minnesota	1,287	1,187	2,473	52.02	1,302	1,200	2,502
Mississippi	962	849	1,811	53.12	974	860	1,834
Missouri	1,741	1,653	3,393	51.29	1,756	1,668	3,424
Montana	319	263	582	54.82	322	266	588
Nebraska	557	533	1,090	51.11	557	532	1,089
Nevada	367	332	699	52.56	375	339	714
New Hampshire	382	356	738	51.71	390	364	754
New Jersey	3,052	2,742	5,794	52.68	3,110	2,794	5,904
New Mexico	509	469	978	52.00	523	482	1,005
New York	5,330	4,511	9,841	54.16	5,398	4,569	9,967
North Carolina	2,106	2,017	4,123	51.08	2,143	2,053	4,196
North Dakota	229	214	443	51.70	232	216	448
Ohio	3,780	3,557	7,336	51.52	3,776	3,553	7,329
Oklahoma	1.136	1,107	2,243	50.66	1,155	1,124	2,279
Oregon	1,031	929	1,960	52.61	1,021	919	1,940
Pennsylvania	4,011	3,544	7,555	53.09	4,051	3,580	7,631
Rhode Island	315	304	619	50.90	319	307	626
South Carolina	1,087	1,045	2,132	50.97	1,104	1,062	2,166
South Dakota	249	235	484	51.36	249	236	485
Tennessee	1,546	1,480	3,025	51.09	1,569	1,502	3,071
Texas	5,705	5,104	10,809	52.78	5,676	5,079	10,755
Utah	488	475	963	50.67	501	488	989
Vermont	202	183	385	52.50	207	187	394
Virginia	1,937	1,867	3,804	50.93	1,966	1,895	3,861
Washington	1,533	1,448	2,981	51.42	1,550	1,464	3,014
West Virginia	699	600	1,299	53.79	704	604	1,308
Wisconsin	1,668	1,544	3,211	51.93	1,692	1,567	3,259
Wyoming	178	154	332	53.51	167	145	312
Total	**81,592**	**75,276**	**156,868**	**52.01**	**82,494**	**76,100**	**158,594**
Percent Change From Prior Year	**0.7**	**1.2**	**1.0**	**—**	**1.0**	**1.0**	**1.0**

Source: Federal Highway Administration, Table SS85-5, published October 1986.

Passenger Car Efficiency Index

(Index: 1967 = 100)



Source: Energy Information Administration, Monthly Energy Review, for 1967 through 1985; *NPN* estimates and projections for 1986.

Passenger Car Energy Indicators—1967-1986

(1967 = 100)

	Passenger Cars Only						Passenger Cars (a)		
	Avg. Fuel Used per Car		Avg. Miles Traveled per Car		Avg. Miles per gal. of Fuel		Number Registered (000)	Gasoline Consumed (000,000 gal.)	Miles Traveled (000,000)
Year	Gal.	Index	Miles	Index	Miles	Index			
1986 (b)	529	80.1	9,950	103.5	18.00	129.5	140,000	74,060	1,393,000
1985	549	80.3	9,827	103.1	17.90	128.5	138,146	73,982	1,317,130
1984	553	80.8	9,787	102.7	17.70	127.1	134,334	73,283	1,274,074
1983	578	84.5	9,654	101.3	16.70	119.9	131,723	73,156	1,229,697
1982	587	85.8	9,533	100.0	16.25	116.7	129,500	72,848	1,191,623
1981	579	84.6	9,002	94.4	15.54	111.6	129,123	71,718	1,124,843
1980	603	88.2	9,135	95.8	15.15	108.8	127,448	73,375	1,129,887
1979	664	97.1	9,485	99.5	14.29	102.6	125,750	80,233	1,162,528
1978	715	104.5	10,046	105.4	14.06	100.9	121,717	83,775	1,194,287
1977	706	103.2	9,839	103.2	13.94	100.1	118,711	80,677	1,141,166
1976	711	103.9	9,763	102.4	13.72	98.5	115,170	78,847	1,098,147
1975	712	104.1	9,634	101.1	13.53	97.1	111,679	76,457	1,050,472
1970	735	107.5	9,978	104.7	13.57	97.4	92,095	65,784	900,992
1967	684	100.0	9,531	100.0	13.93	100.0	82,367	55,110	774,203

(a) These totals include motorcycles; (b) Estimates by *NPN* based on Federal Highway Administration preliminary data.
Source: Energy Information Administration, Monthly Energy Review; Federal Highway Administration, Table (VM-1)

Mileage and Fuel Consumption Data—1985

	Passenger Vehicles						
	Passenger Cars	Motor-cycles	All Personal Passenger Vehicles	Buses	All Passenger Vehicles	Trucks and Combinations	All Motor Vehicles
Fuel consumed (million gal.)	72,512	240	72,752	1,230	73,982	47,376	121,358
Average per vehicle (gal.)	549	44	529	2,072	536	1,215	685
Average miles per gal.	17.90	50.00	18.01	5.64	17.80	9.66	14.52
Vehicles registered (thousands)	132,108	5,444	137,553	593,527	138,146	38,989	177,135
Average miles traveled	9,827	2,204	9,525	11,678	9,534	11,737	10,019
Average miles traveled (millions):							
Main rural roads	—	—	304,196	1,592	306,508	130,397	436,905
Local rural roads	—	—	195,613	1,892	197,505	95,905	293,410
Urban streets	—	—	809,673	3,447	813,117	231,330	1,044,447
Total travel in 1985	**1,298,199**	**12,000**	**1,310,199**	**6,931**	**1,317,130**	**457,632**	**1,774,762**
Total travel in 1984	**1,255,342**	**12,000**	**1,267,342**	**6,732**	**1,274,074**	**444,074**	**1,718,148**

Source: Federal Highway Administration, Table VM-1, 1985, published October, 1986; all 1985 data are preliminary. For revised 1984 data, see FHA Highway Statistics 1985, Table VM-1.

1985 Relationships by Population and Drivers

State	Resident Population (1,000)	Licensed Drivers per 1,000 Resident Population	Registered Motor Vehicles per 1,000 Resident Population	Gal. of Fuel per Vehicle	Miles per Gal.	Annual Miles per Vehicle	Vehicle Miles per Licensed Driver
Alabama	4,021	612	830	651	16.14	10,513	14,256
Alaska	521	576	678	808	13.46	10,878	12,800
Arizona	3,187	729	701	802	12.04	9,655	9,283
Arkansas	2,359	731	587	994	12.43	12,367	9,927
California	26,365	662	717	668	16.44	10,985	11,901
Colorado	3,231	707	854	617	15.35	9,477	11,446
Connecticut	3,174	729	777	604	14.87	8,987	9,571
Delaware	622	720	748	787	14.67	11,535	11,977
Dist. of Col.	626	615	521	550	17.97	9,876	8,377
Florida	11,366	705	868	592	15.07	8,926	10,985
Georgia	5,976	654	766	813	14.43	11,728	13,736
Hawaii	1,054	564	618	518	20.07	10,389	11,385
Idaho	1,005	689	849	615	14.68	9,032	11,135
Illinois	11,535	602	670	681	13.46	9,169	10,194
Indiana	5,499	654	732	781	12.97	10,135	11,336
Iowa	2,884	659	935	580	12.91	7,490	10,621
Kansas	2,450	676	877	668	13.42	8,974	11,641
Kentucky	3,726	603	702	759	14.38	10,907	12,685
Louisiana	4,481	615	672	780	14.20	11,077	12,107
Maine	1,164	691	722	751	14.70	11,044	11,541
Maryland	4,392	662	746	676	15.05	10,177	11,466
Massachusetts	5,822	651	642	681	15.59	10,619	10,468
Michigan	9,088	688	740	647	15.50	10,020	10,777
Minnesota	4,193	590	807	626	15.43	9,656	13,218
Mississippi	2,613	693	668	810	13.52	10,957	10,564
Missouri	5,029	675	707	831	13.29	11,041	11,577
Montana	826	705	790	787	14.76	11,610	13,008
Nebraska	1,606	679	783	715	13.41	9,588	11,061
Nevada	936	747	758	820	13.01	10,665	10,823
New Hampshire	998	739	976	492	15.74	7,740	10,216
New Jersey	7,562	766	649	736	14.70	10,818	9,167
New Mexico	1,450	674	811	789	14.30	11,286	13,569
New York	17,783	553	508	695	14.40	10,011	9,198
North Carolina	6,255	659	711	780	14.38	11,218	12,109
North Dakota	685	647	956	649	12.68	8,223	12,160
Ohio	10,744	583	754	670	13.91	9,325	10,298
Oklahoma	3,301	680	868	744	14.63	10,888	13,900
Oregon	2,687	729	820	660	14.75	9,737	10,949
Pennsylvania	11,853	637	608	704	14.85	10,463	9,534
Rhode Island	968	640	630	644	14.83	9,545	9,405
South Carolina	3,347	637	664	835	14.38	12,008	12,513
South Dakota	708	683	919	710	13.60	9,652	12,972
Tennessee	4,762	635	788	786	12.28	9,659	11,984
Texas	16,370	660	760	813	14.16	11,512	13,254
Utah	1,645	585	668	742	14.76	10,955	12,501
Vermont	535	720	743	697	16.89	11,791	12,172
Virginia	5,706	667	745	734	15.35	11,268	12,599
Washington	4,409	676	800	597	16.34	9,748	11,532
West Virginia	1,936	671	610	756	14.19	10,728	9,752
Wisconsin	4,775	673	667	711	16.19	11,509	11,422
Wyoming	509	652	981	842	12.83	10,811	16,275
Total	**238,739**	**666**	**719**	**707**	**14.62**	**10,337**	**11,314**

Source: Federal Highway Administration, Table SS85-18, published October 1986.

Gasoline	Motor Oil
Adams Resources & Energy Inc.	
Phillips (r,ur,up,d)	(Phillips 66)
Conoco (r,ur,up)	M & M
	Unique
	HDS
	HDS + 1
	Super HDS 11
	Trop Artic
Advanced Oil Co.	
Prestige	Kendall
Agway Petroleum Corp.	
Agway (r,ur,up,d)	Agway
Power Champ (r,ur,up,d)	
American Petrofina Inc.	
Fina (r,ur,up)	Fina SA Non Detergent
	Fina Ultra Supreme
	Fina Universal
Amoco Corp.	
Amoco (r)	Amoco Amolube
Amoco Lead Free (ur)	Amoco 100
Amoco Silver Lead Free	Amoco 200
Amoco Premium Lead Free (up)	Amoco 300
	Amoco 400
	Amoco Turbo
	Amoco LDO
	Amoco Ultimate
Anchor Gasoline Corp.	
Canal (r,ur,up)	
Bayou (r,ur,up)	
Arkansas Valley Petroleum	
DX (r,p,sp)	
Phillips 66 (r,p,sp)	
Ashland Oil Inc.	
Ashland (r,ur,up)	SuperAmerica
SuperAmerica (r,ur,up,sp,usp,d)	Valvoline
Payless (r,ur,up,sp,usp,d)	
Hi-Fy (r,ur,up,sp,usp,d)	
Bi-Lo (r,ur,up,sp,usp,d)	
Save More (r,ur,up,sp,usp,d)	
SoLo (r,ur,up,sp,usp,d)	
Red Head (r,ur,up,sp,usp,d)	
Atlantic Refining & Marketing Corp.	
Regular Leaded	Special 30
Regular Unleaded	Super Premium 30
Super Unleaded Premium	Premium Motor Oil 10W30
	Super Premium 10W40
	Super Fleet 15W40
Atlantic Richfield Co.	
ARCO (r,ur,up)	ARCO
	ARCOfleet HD
	ARCO XHD
	ARCOfleet S3 Plus
	ARCOsupreme
	ARCO GT
	ARCO Graphite
Automatic Comfort Corp.	
Sunoco (r,ur,up,usp)	Citgo
Texaco (r,ur,up)	Texaco
	Sunoco
Bagwell Oil Co., Inc.	
Union 76	Union 76
	Wolf's Head
E.M. Bailey Distributing Co.	
Chevron (r,ur,up,d)	Chevron
Pettro (r,ur,sp,d)	Quaker State
Beacon Oil Co.	
Beacon (r,ur,p,up,d)	Sequoia
Ultra (r,ur,p,d)	Beacon
Gas-N-Go (r,ur,p,d)	
Best Oil Co.	
	Gulf
	Mobil
	Amoco
	Quaker State
Brennan Petroleum Products Co. Inc.	
Brenco (r,ur,p,up)	
Browning Oil Co.	
Shell (r,ur,up)	Shell
Rally (r,ur,up)	
California Target Enterprises Inc.	
Fast Save (r,ur,p,up,sp,usp)	
Q Brand (r,ur,p,up,sp,usp)	
Quality (r,ur,p,up,sp,usp)	
Campbell Oil Co. (Ohio)	
Sunoco	Sun
Shell	Citgo
Union 76	Valvoline
Ashland	Shell
Marathon	Pennzoil
Standard Oil	Union
	Kendall
Cannon Oil Corp.	
Cannon (r,p,sp)	Cannon Regular
	Cannon 30WHD
	Cannon 10W-40
Cardon Corp.	
Mobil	Mobil
Gulf	Shell
Chevron	Pennzoil
	Valvoline
	Quaker State
Castrol Inc.	
	Castrol Heavy Duty 30
	Castrol Heavy Duty 40
	Castrol GTX 5W/30
	Castrol GTX 10W/30
	Castrol Multi-grade 20W/40
	Castrol GTX 10W/40
	Castrol GTX 20W/50
	Castrol GTX 10W/50
Cenex	
Cenex (r,ur,up)	Econex
Diesel Fieldmaster (usp)	Cenex Golden D
	Superlube 518
	Superlube XL
Certified Oil Co.	
Certified (r,ur,p)	Certified
	Quaker State
	Valvoline
Chapman Inc.	
Texaco (r,ur,p,up,sp,usp)	URSP
	Havoline
Charter Marketing Co.	
Charter Old Colony (r,ur,up)	Charter ND 30
A-1 (r,ur,up)	Charter HD 30
	Charter 10W30
	Charter 10W40
	Charter BIA Outboard
Chevron Corp.	
Chevron Regular (r)	Chevron Special
Chevron Unleaded (ur)	Chevron DELO
Chevron Supreme Unleaded (up)	Chevron Custom
	Chevron RPM
Calco Regular (r)	Chevron DELO 400
Calco Unleaded (ur)	Gulfpride Single-G
Calco Premium Unleaded (up)	Gulfpride Super Premium
	Gulf Super Duty
Gulf (r)	Gulf Super Duty Plus
Gulf (ur)	Gulf Lube XHD
Gulf Super Unleaded (up)	
Piggy Bank (r,ur,up)	
Cibro Gasoline Corp.	
Cibro (r,ur,p,up)	Cibro Prima
	Cibro D-3000
Circle K Corp.	
Aero K (r,ur,up)	
Citgo Petroleum Corp.	
Citgo Regular (r)	Citgo Non-detergent Motor Oils
Citgo Unleaded (ur)	
Citgo the Performer (up)	Citgo C-300 HD Detergent Motor Oils
	Citgo All Season Motor Oils
	Citgo C-500 Motor Oils
	Citgo C-500 PLUS Motor Oils
Clark Oil & Refining Corp.	
Regular Leaded	Clark H.D.
Regular Unleaded	Clark Premium 5W-30
Super Unleaded	Clark Premium 10W-40
	Clark Premium 10W-30
Coast Oil Co.	
Texaco (r,ur,up,d)	Morlube
Arco (r,ur,up,d)	Coast
Rotten Robbie (r,ur,p,up,d)	
Coastal Corp.	
Derby	
Coen Oil Co.	
Amoco	
Mobil	
Union	
Citgo	
Colonial Oil Industries Inc.	
Eagle (r)	
Colonial No-Lead (ur)	
Colonial No-Lead (up)	
Golden Eagle (usp)	
Como Oil Co.	
Phillips 66 (r,ur,p,up)	
Conoco Inc.	
Conoco (r,ur,up)	Par
	Tracon
	Tracon Supreme
	Super Motor Oil
	Fleet Motor Oil
	H.P. Racing
	H.P. Turbo
	H.P. Extreem
CONNA Corp.	
Regular Leaded	
Premium Unleaded	
Super-premium Unleaded	
Diesel	
Consumers Oil Corp. of Trenton, N.J.	
Mobil	
Chevron	
Texaco	
Cook & Cooley Inc.	
Texaco (r,ur,up)	
Crown Central Petroleum Corp.	
Crown (r)	All Season HD
Lead-Free (ur)	Premium HD
Lead-Free Xtra (up)	Quality
Diesel (d)	Universal ATF
Crystal Flash Petroleum Corp.	
Citgo	
Crystal U.S.A. Oil Inc.	
Crystal (r,ur,p,d)	Saxon
C.S.C. Oil Co.	
CSC (r,ur,up)	
Curt's Oil Co., Inc.	
Curt's (r,up,usp,d)	Curt's HD
	Curt's Premium
	Curt's ATF
Curtis Parker Oil Co. Inc.	
Regular leaded	Par
Regular unleaded	Tracon
Premium unleaded	Super
	New Generation
	Fleet
K. E. David, Ltd.	
Citgo (r)	
DeBlois Oil Co.	
Texaco (r,ur,usp)	Havoline
Sunoco (r,ur)	Havoline/Sunoco 10W30
Sunoco Ultra (usp)	Havoline/Sunoco 10W40
Dennis K. Burke Inc.	
Citgo (r,ur,up)	Citgo
	Fleetline
	Shell
	Chevron
	Castrol
	Texaco
	Amalie
	Exxon
Derby Refining Co.	
Derby (r)	Triumph
DerbyStar Kleen (ur)	Super Flex
HI-LO Premium Unleaded	Ultra Life
	Premium E^2
Desert Oil Co.	
Chevron	
Diamond Shamrock Refining & Marketing Co.	
GTC (usp)	
Dickey, Inc.	
Conoco	
Texaco	
Dixie Oil Co.	
Dixie (r,ur,up)	Dixie
	Super Dixie
Drakes Refining Stations	
	National
	Quaker State
	Pennzoil
DWF, Inc.	
Sun (r,ur,up,sp,usp)	CDI
	Pennzoil
	DX
	Texaco
	Quaker State

Gasoline	Motor Oil
East Coast Oil Corp.	
East Coast (r,ur,up)	Superior
	Warren
	Pennzoil
Edgington Oil Co., Inc.	
Regular Leaded	
Regular Unleaded	
Premium Leaded	
EMRO Marketing Co.	
	Titan H.D.
	Titan 5W30, 10W30, 10W40, 15-40
Englefield Oil Co.	
Duke (r,ur,up)	Duke
Gulf (r,ur,up)	Gulf
Marathon (r,ur,up)	Marathon
	Mobil
Exxon Co., U.S.A.	
Exxon (r,ur,usp)	Superflo High Performance
Exxon Plus	Superflo Supreme Performance
Farm & Home Oil Co.	
Texaco (r,ur,p,up,sp,usp)	Texaco
Farmland Industries, Inc.	
Co-op Magnum XP (up)	Co-op Double Circle
Co-op Ruby GHP (dp)	Co-op Premium Dual Season
F.O. Fletcher Oil, Inc.	
Amoco (r)	Chevron Delo
Chevron (up)	Shell Rotella
Texaco (usp)	
Sinclair (r)	
Flying J (up)	
Tosco (usp)	
Flying J Inc.	
Flying J (r,p,sp)	
Husky (r,p,sp)	
Fortmeyer Inc.	
Pennzoil	Citgo
	Pennzoil
	Kendall
	Arco
Foster Oil Co.	
Regular Leaded	Union
Regular Unleaded	Mobil
Super Premium Unleaded	Pennzoil
Franko Oil Co.	
Franko (r,ur,p,sp)	
Fuelman, Inc.	
Fuelman (r,ur,p,d)	Fuelman Fleet Super Duty
H.N. Funkhouser & Co.	
Handy Mart (r)	
Gasco Gasoline, Inc.	
Gasco (r,ur,up)	Gasco Premium
	Gasco-H.D. Premium
Geldbach Petroleum Co., Inc.	
Mobil	Mobil
General Oil Co. Inc.	
Conoco	Conoco
Sinclair	
Getty Petroleum Corp.	
Getty	Getty
Power Test	Power Test
Global Petroleum Corp.	
Mobil	
Sun	
Conoco	
Global	
King	
Godwin Oil Co.	
Texaco	
Phillips	
Gresham Petroleum Co.	
Amoco (r,ur,up,d)	Amoco
Gulf Oil	
Good Gulf (r)	Gulflube
Gulfcrest (ur)	Gulflube HD
Gulf Super Premium (usp)	Gulflube XHD
	Super Duty
	Gulfpride
	Super Premium
Gull Industries Inc.	
Gull (r,ur,up)	
Highland Petroleum Inc.	
Gas Pit (r,p)	
Highway Oil, Inc.	
Regular leaded	Workingman's Friend
Regular unleaded	
Premium unleaded	
Diesel	
Angus I. Hines Inc.	
Shell (r,ur,up,d)	
Texaco (r,ur,up,d)	
Sentry (r,ur,up,d)	
Citgo	
Hop-In Food Stores	
Hop-In w/ethanol (r,ur,up)	Havoline
	Pennzoil
	Quaker State
Horkey Oil Co. Inc.	
Shell (r,ur,p,d)	Shell
Horn Distributing Co. Inc.	
Gulf	
Hughes Oil Co.	
Mobil	Mobil
Hughes	
Hull Oil Co.	
Hull (r,ur,p,up,sp,usp,d)	
Hunt Oil Co.	
Parade	
Independent Stations Co.	
Atlantic (r,ur,sp,usp)	Arco
	Shell
	Chevron
	Quaker State
Inter State Oil Co. Inc.	
	National
	Interstate
J. & L. Oil, Inc.	
	J&L Special
	J&L Certified HD
	J&L HD10W30, 10W40
Jacobus Co.	
Citgo	
Union 76	
Joe Bob's Food Stores, Inc.	
Crystal (r,ur,up,usp)	Saxon N.D.
	Saxon H.D.
	Saxon 10W30, 10W40
Johnson Products Inc.	
Citgo (r,ur,up)	Citgo
Sunoco	Mobil
Getty (ur,up)	Sunoco
Texaco (r,ur,up)	
Mobil (r,ur,up)	
Top Gas (r,ur,up)	
Kellam Energy, Inc.	
	Texaco
	Quaker State
	Arco
Kellett Oil Co.	
Texaco (r,ur,p,up,sp,usp)	GRC
Phillips 66 (r,ur,p,up,sp,usp,o)	Texaco
Sinclair (r,ur,p,up,sp,usp)	
Kelley Williamson Co.	
	Mobil
	Citgo
	Phillips
Kerr-McGee Refining Corp.	
KM (r,ur,p,up,sp,usp,o)	ValuLube
	Blue Max "All Fleet"
	Heavy Duty
	Blue Velvet FEO
Kickapoo Oil Co.	
Kickapoo (r,ur,p,up,d)	Kickapoo
	Pennzoil
Kimber Petroleum Corp.	
Amoco	Amoco
Citgo	Citgo
Mobil	Mobil
Kimbro Oil Co.	
Amoco (r,ur,usp)	Amolube 30
	Amoco MV10W30
	Amoco LDO 10W40
Kingston Oil Supply Corp.	
Mobil	Mobil
Getty	
Kirschner Bros. Oil Co.	
Chevron	
Getty	
Krause Gentle Oil Corp.	
Kerr-McGee	Gordons
Conoco	Pennzoil
Amoco	Quaker State
Total	
Citgo	
Derby	
Lake Shore Petrocorp	
Phillips 66 (r,ur)	Phillips Trop Artic
Marathon (r,ur)	Phillips All Season
Land O' Lakes Inc.	
Land O' Lakes (r,ur,d)	Supreme 212
	Golden D
Lokey Oil Co.	
Diamond Shamrock	Diamond Shamrock
Lyden Oil Co.	
Amoco (r,ur,usp,d)	Amoco
Citgo (r,ur,up)	Quaker State
	Valvoline
MAPCO Petroleum Inc.	
Delta (r,ur,up,d)	Delta 10W40
	Delta Non Detergent 30-Way
	Delta Heavy Duty
Marathon Petroleum Co.	
MILE-maker Regular (r)	#287 Marathon Hyd. & Flushing Oil
MILE-maker Lead-Free (ur)	
SUPER-M Lead-Free (up)	Multipower-3 Motor Oil
	V.E.P. Heavy Duty Motor Oil
	Endurance Oil
	Marafluid ATF
	All-Season Motor Oil
	577 Marafluid Super HT
	Dexron II
	Ultra-D 5W-40
Martin Oil Marketing Ltd.	
Martin (r,ur,up,d)	Martin Oil
	Martin HD
	Martin 10/30
	Martin 10/40
McDowell Oil Service Inc.	
Exxon	
McLeieer Oil, Inc.	
	Kendall
	Pennzoil
	Sunoco
	Unocal
	Marathon
	Quaker State
Merit Oil Corp.	
Merit (r,ur,up)	Merit Special
	Merit 10W30
	Merit 10W40
	Merit ATF
Merritt Truax Inc.	
Texaco	Chevron
Arco	Texaco
Pride of Oregon	Arco
	Quaker State
	Kendall
M.G.S. Oil, Petroleum & General Trading Corp.	
Marathon (r,ur,usp)	ARCO
Gulf (r,ur,usp)	Marathon
Mid-Missouri Oil Co.	
Shell	
Midwest Petroleum Co.	
Sunoco	All Temp
Shell	Pennzoil
	Sun
	Shell
	Chevron

KEY:
Gasoline
(r) Regular
(ur) Unleaded regular
(p) Premium
(up) Unleaded premium
(sp) Super Premium
(usp) Unleaded super premium
(o) Other
(d) Diesel

Gasoline	Motor Oil
Milder Oil Co. Inc.	
Texaco	Milderene
	Cato
	Texaco
Miller Enterprises Inc. (Handy Way Food Stores)	
Union 76 (r,ur,p,d)	Union 76
	Quaker State
Miller & Holmes, Inc	
M&H	M&H
Miller Oil Co. (Va.)	
Amoco	
Exxon	
Phillips 66	
Mobil	
Missouri Terminal Oil Co.	
Fina (r,ur,p,up,usp,o)	Fina
Midco (r,ur,up,usp,o)	
Mobil Oil Corp.	
Mobil Regular (r)	Mobil Regular
Mobil Unleaded (ur)	Mobil Heavy Duty
Mobil Super Unleaded (up)	Mobil Super 10W-30
	Mobil Super 10W-40
Mid-Grade (o)	Mobil Super 20W-50
Mobil Special (o)	Mobil Super 5W-30
	Mobil 1 Formula 15W-50
	Mobil 1 5W-30
E. L. Morgan Co.	
Chevron	Morgane
MPD Petroleum Inc.	
Union (r,ur,p,up,sp,usp)	Pennzoil
	Kendall
	National
Murphy Oil USA Inc.	
Spur (r,ur,up)	
Musket Corp.	
Love's (r,ur,usp,d)	Double Eagle Recond. 30W
	Sup-R-Lub 30W
	Sup-R-Lub 20W
	Pennzoil 20W
	Pennzoil 30W
	Quaker State Red 30W
National Convenience Stores	
Stop-N-Go	
Turbo-Go (usp)	
National Oil Co.	
Natco (r)	Natco 30
Natco Plus (ur)	Natco 10W-30
Natco Super (p)	Natco 10W-40
National Oil & Gas Inc.	
Phillips 66 (r,ur,p,up,sp,usp)	
Marathon (r,ur,p,up,sp,usp)	
Newell Oil Co. Inc.	
Gulf (r,ur,up)	Gulf Pride
	Delo RPM
Noco Energy Corp.	
Noco (r,ur,p,up,sp,usp)	Exxon
	Mobil
Northville Industries Corp.	
Northville (r,ur,usp)	Northville
Oils Inc.	
Oil Kote	Oil Kote
Olympian Oil Co.	
Olympic (r,ur)	Olympic
Parker Oil Co. Inc.	
Union 76	Union 76
Exxon	Exxon
Citgo	Citgo
Petrol	Texaco
Peavey Oil Co.	
Texaco (r,ur,up,d)	Texaco
	Chevron
	Pennzoil
	Valvoline
Pennzoil Products Co.	
Pennzoil (r,ur,up,sp)	Pennzoil
	Wolf's Head
Pester Corp.	
Derby (r,ur,p,up,sp,usp)	Derby
Petroleum Marketers Inc.	
Shell (r,ur,up)	Citgo
Exxon (r,ur,up)	Exxon
Citgo (r,ur,up)	Shell
Petrotex Marketing, Inc.	
Shell (r,ur)	Liberty
	Fina
	Pennzoil
	Quaker State
	Chevron
	Shell
Phillips Petroleum Co.	
Phillips 66 (r,ur,up,usp)	Unique
	MM Motor Oil
	Super HD II
	Trop-Artic
Pilot Oil Corp.	
Pilot (r,ur,up,d)	Pilot Economy Motor Oil
	Pilot Premium Motor Oil
Pride of Texas Distributing Co. Inc.	
Texaco	
Diamond Shamrock	
Pride Oil Co. Inc. (Tenn.)	
Pride (r,ur,up)	Kelso
	Havoline
	Kendall
Private Brand Services Inc.	
	Pennzoil
Quaker State Oil Refining Corp.	
Quaker State (r,ur,up)	Quaker State HD Motor Oil
	Quaker State HDX Universal Fleet Motor Oil
	Quaker State Super Blend Motor Oil
	Quaker State DeLuxe Motor Oil
	Quaker State Sterling Motor Oil
QuikTrip Corp.	
QuikTrip (r,ur,up,d)	Redline
Racetrac Petroleum Inc.	
Racetrac (r,ur,up,usp,o)	
Reinauer Petroleum Co.	
Citgo (r,ur,p,up,sp,usp,o)	
Remote Services Inc./Conna Corp.	
Regular leaded	
Regular unleaded	
Super unleaded	
Diesel	
River Oil Co.	
Phillips 66	Phillips 66
Robinson Oil Co. Inc.	
Rotten Robbie (r,up,usp,d)	
Russell Petroleum Corp.	
Regular leaded	Quaker State
Regular unleaded	Texaco
Premium unleaded	Fina
Sahara Oil Co. Inc.	
Texaco (r,ur,p,up,sp,usp)	
Santee Oil Co. Inc.	
Shell (r,ur,up)	Shell Fire & Ice
	Shell Rotella T
	Shell Rotella X-100
Save-X USA Inc.	
Save-X (r,ur,up)	Econo (Premier)
Serv-N-Save (r,ur,up)	Quaker State
	Texaco
Sears Oil Co. Inc. (N.Y.)	
Sears	Tri Pure
	Sears Premium
	Sears Supreme
Self Service Oil Co.	
U Pump (r,ur,up,d)	Pennzoil
Sprint (r,ur,up,d)	Quaker State
	Citgo
Shay Oil Co. Inc.	
Exxon (r,ur,p,up,sp,usp)	Plus
	Uniflo
	Extra
	Aquaglide
Shelby Petroleum Corp.	
Peer (r,ur,p,up,sp,usp,o)	Bonus Regular
Sail (o)	Sail Premium
Bonus (r,ur,p,up,sp,usp,o)	Peer Premium
	Peer HD
	Peer Multi-Grade
	(Peer AFT)
Shell Oil Company	
SU-2000 (usp)	Shell X-100
RU-2000 (ur)	Shell Fire & Ice
Shell Regular (r)	
SR-2000 (p)	
Shotmeyer Bros. Petroleum Corp.	
Mobil	Mobil
Shotmeyer Oil Corp.	
U-Save	
Mogas	
The SICO Co.	
Amoco (r,ur)	Citgo
Atlantic (r,ur)	Texaco
Texaco (r,ur)	Valvoline
	Amoco
	Quaker State
Simon Oil Co. Inc.	
Sunoco (r,ur,up)	
Mobil (r,ur,up)	
Sinclair Oil Corp.	
	Dinolene
	Dino Supreme
R.L. Smeltz Oil Co. Inc.	
Amoco (p,up,sp,usp)	Amoco
Silver (o)	Pennzoil
Pennzoil (r,ur,p,up,sp,usp)	Quaker State
Smith-Shafer Oil Co.	
SS (r,ur,up)	SS
	Quaker State
SMO Inc.	
Texaco	Venellus
BP	Havoline

Somerset Refinery Inc.

Gasoline	Motor Oil
Somerset (r,ur,p)	G.R. (Gurley Products)
	Havoline
	Valvoline
	Pennzoil
	Quaker State

SOS Oil Corp.

Gasoline	Motor Oil
Gulf	
SOS	

Southern Counties Oil Co.

Gasoline	Motor Oil
ARCO (r,ur,p,up,sp,usp,o)	Southern Counties Oil
Mobil (r,ur,p,up,sp,usp,o)	Mobil
SCOC (r,ur,p,up,sp,usp,o)	ARCO
	Chevron
	Shell
	Texaco
	Union

Southern Oil Co. Inc.

Gasoline	Motor Oil
Phillips 66	Phillips 66
	Quaker State
	Pennzoil

Southern States Co-op

Gasoline	Motor Oil
Southern States (r,ur,up)	

Spartan Petroleum Co. Inc.

Gasoline	Motor Oil
Chevron (r,ur,sp)	Chevron
	Zeroline

The Spencer Companies Inc.

Gasoline	Motor Oil
Amoco (r,up,usp,o)	Amoco
	Citgo
	Texaco
	Quaker State

M. Spiegel & Sons Oil Corp.

Gasoline	Motor Oil
Gulf	
SOS	

The Standard Oil Company (Ohio)

Gasoline	Motor Oil
Octron (r)	HQD
Cetron (ur)	Premex
Super Cetron (up)	Boron
Good Gulf (r)	QVO
Gulf Crest (ur)	Nitrex
Gulf Super (up)	Gulf Pride

Steuart Petroleum Co.

Gasoline	Motor Oil
Steuart (r,ur,p,up,sp,usp)	Kampcam II
	Pennzoil

Stevens Oil Co.

Gasoline	Motor Oil
Chevron (r,p,up,sp,usp)	Chevron Zerolene
	Chevron Special
	Chevron Custom
	Chevron ATF
	Chevron Delo

Sumrall Oil Services, Inc.

Gasoline	Motor Oil
SOS	

Sun Refining & Marketing Co.

Gasoline	Motor Oil
Regular leaded	Diamond
Regular unleaded	Sun Lube
Plus (up)	Dynalube
Super Sunoco Ultra (usp)	Special
Economy (d)	MPG Plus

Sunshine Jr. Stores, Inc.

Gasoline	Motor Oil
JR. (r,ur)	Saxon
Citgo (r,ur)	Citgo
	Havoline

Taylor Oil Co.

Gasoline	Motor Oil
ETNA (r,ur,up)	

TCR Inc.

Gasoline	Motor Oil
TCR (r,ur,up)	TCR Non-Detergent
	TCR High Detergent
	TCR 10W-40

Tenneco Oil Co.

Gasoline	Motor Oil
Tenneco (r,ur,up)	Shurlube
Direct (r,ur,up)	Tenneco Four Seasons
Trust (r,ur,up)	Tenneco Extra Heavy Duty
Red Diamond (r,ur,up)	Tenneco Special Detergent
	Tenneco Super H.D. Diesel Motor Oil

Texaco Inc.

Gasoline	Motor Oil
Texaco Regular (r)	Havoline Premium
Texaco Super Regular w/Ethanol (o)	Havoline Supreme
Texaco Unleaded (ur)	Havoline High Performance
Texaco Unleaded Plus (up)	
Texaco Super Unleaded (usp)	
Texaco Super Unleaded w/Ethanol (o)	
Texaco Premium w/Ethanol (o)	

Texas City Refining Inc.

Gasoline	Motor Oil
TCR (r,ur,usp)	TCR

Texas Star Oil Co.

Gasoline	Motor Oil
Texaco	Texaco
	Chevron
	Gulf

Thornhill Oil Co.

Gasoline	Motor Oil
Amoco (r,ur,up)	Amolube
	LDO
	Ultimate

Time Saver Stores Inc.

Gasoline	Motor Oil
Amoco (r,ur,usp)	
Texaco (r,ur,usp)	
Gulf	
Exxon	
Shell	
Private	

Tooley Oil Co.

Gasoline	Motor Oil
Shell (r,ur,sp,usp,d)	
Tooley's (r,ur,sp,usp,d)	

Torco Oil Co.

Gasoline	Motor Oil
Sun	Sun
Marathon	Texaco

Total Petroleum Inc.

Gasoline	Motor Oil
Total (r,ur,up,usp,d)	Total Duralube
Vickers (r,ur,up,usp,d)	Total Super HD
APCO (r,ur,up,usp,d)	Total Superlube
Best (r,ur,up,usp,d)	Total 500

Transit Oil Co.

Gasoline	Motor Oil
Transit (r,p,sp)	Transit

Travelers Petroleum Inc.

Gasoline	Motor Oil
Texaco (r,ur,up)	
Self Way (r,ur,up)	

Trenton Oil Co. Inc.

Gasoline	Motor Oil
Amoco (r,ur,usp)	Amoco
	Quaker State

Triton Inc.

Gasoline	Motor Oil
Hoppy (r,ur,up)	

Ultramar Petroleum Inc.

Gasoline	Motor Oil
Ultramar (r,ur)	Ultramar
Mobil (r,ur)	Chevron
	Mobil

Ultra Power Corp.

Gasoline	Motor Oil
Gulf (r,ur,p,up,sp,usp,o)	Foxhead
Ultra Power (r,ur,p,up,sp,usp,o)	ARCO
	Gulf

United Refining Co.

Gasoline	Motor Oil
Super Kwik (usp)	

Unocal Corp.

Gasoline	Motor Oil
76 (r,ur,up)	Unocal Heavy Duty
	Unocal Premium
	Unocal Guardol
	Unocal Super 10W-30
	Unocal Super 10W-40
	Unocal 20W-50 High Performance

Wake Up Oil Co.

Gasoline	Motor Oil
Wake Up (r,ur,usp)	

Warren Equities, Inc.

Gasoline	Motor Oil
Sunoco	MacMillan
Citgo (r,ur,up)	Oilzum
Mobil (r,ur,up)	Citgo
	Sunoco
	Shell
	Mobil

Webster Oil Co.

Gasoline	Motor Oil
Phillips	Eagle
	Trop Artic
	Quaker State
	Pennzoil
	Havoline

West Penn Oil Co., Inc.

Gasoline	Motor Oil
	Emblem Oil

Western Marketing Inc.

Gasoline	Motor Oil
Conoco (r,ur,up,d)	Delo
Shell (r,ur,up)	Conoco Par
	Conoco Fleet
	Conoco Super
	Conoco Fleet Supreme
	Shell Rotella
	Aaro Shell

Wickland Oil Co.

Gasoline	Motor Oil
Regal (r,ur,p,up)	

A.T. Williams Oil Co.

Gasoline	Motor Oil
Wilco (r,ur)	Wilco

J.H. Williams Oil Co. Inc.

Gasoline	Motor Oil
Union 76 (r,ur,up)	Union Custom
	Union HD
	Union Guardol
	Union Premium
	Union Super
	Union HP-20W50

The Wills Group, Inc.

Gasoline	Motor Oil
	Havoline
	Phillips
	Exxon
	BP
	Chevron

York Oil Co. Inc.

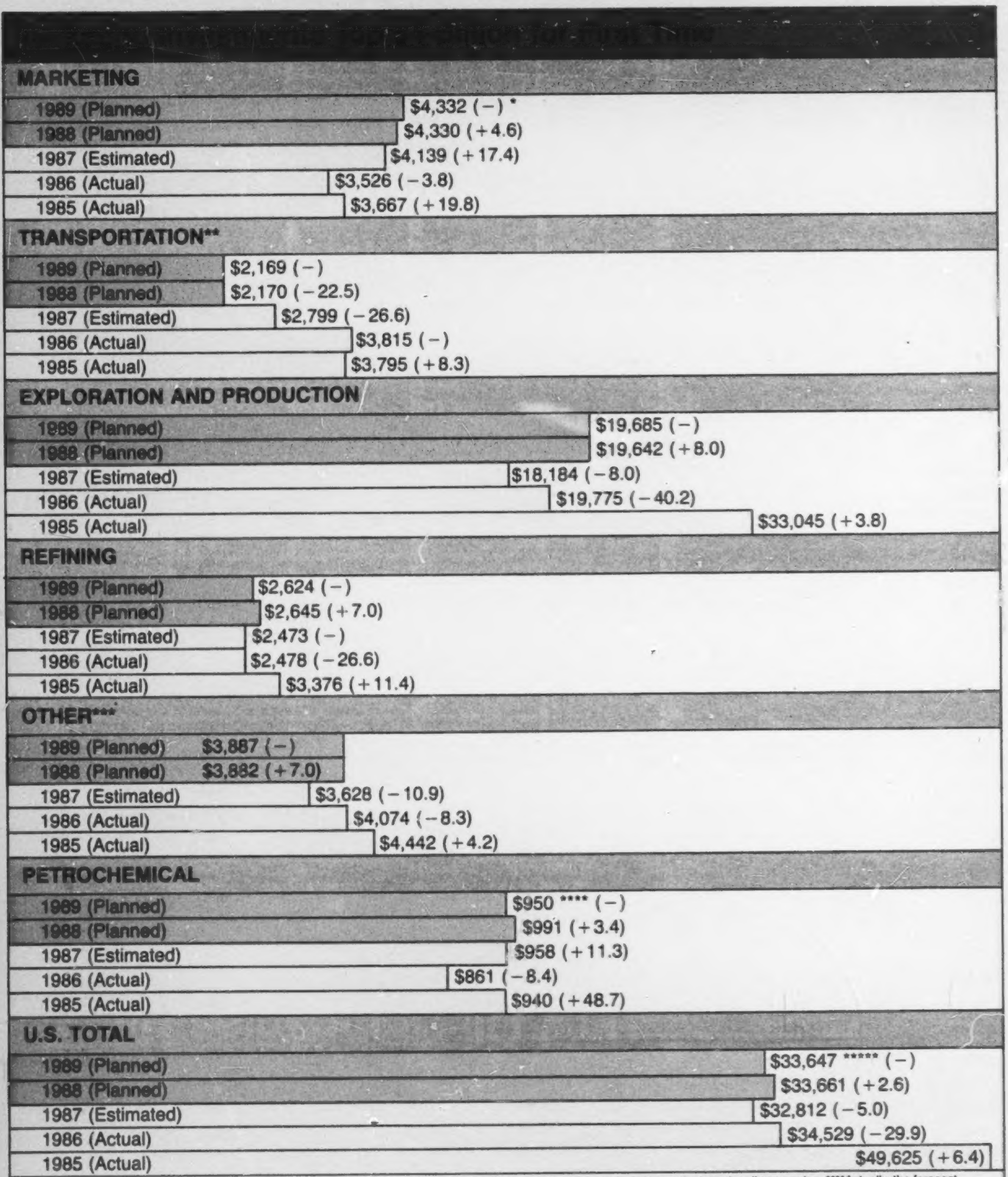
Gasoline	Motor Oil
Citgo (r,ur,up)	

Zephyr Inc.

Gasoline	Motor Oil
Zephyr (r,ur,up)	Conoco
	Texaco
	Mobil
	Pennzoil
	Shell

Marketing Investments Are on the Upside

Even though product prices and profits were strictly on the downside in 1986, capital investments in oil marketing facilities are nearing record proportions for 1987 and 1988, according to the Data Resources, Inc. subsidiary of McGraw-Hill, Inc., of New York. The latest survey—DRI does one each spring and fall—was released less than a month ago.



Figures in parentheses indicate percentage change from previous year. **Does not include gas pipe lines. ***Includes coal mining by oil companies. ****Actually, the forecast did not include an estimate for 1989 but *NPN* made a projection based on prior data. *****1989 total includes a projected estimate for petrochemicals in that year, as indicated in preceding footnote.

Source: Data Research/McGraw-Hill, Inc. Thirty-fifth survey of Preliminary Plans for New Plants and Equipment 1985-1989, published in May, 1987.

Capital Spending in the Oil Industry: A 20-Year Overview at Home and Abroad

Because of the turmoil in the domestic and foreign oil industries in 1986 as a result of the collapse of crude oil and product markets, Chase Manhattan Bank did not complete its 1985 survey of capital spending within the allotted time frame. Both the 1985 and 1986 surveys are being rushed to completion and now are expected to be published later this summer.

(Millions of Dollars)

	1984		1983		1982		1981		1980	
	U.S.	Foreign	U.S.	Foreign	U.S.	Foreign	U.S.	Foreign	U.S.	Foreign
Marketing	$ 1,900	$ 3,275	$ 1,375	$ 3,330	$ 1,400	$ 3,700	$ 1,425	$ 3,775*	$ 1,300	$ 3,750
Refining (a)	4,200	15,700	5,100	17,075	7,550*	19,525*	7,250	18,325	5,650	16,125
Transportation	975	5,925	1,000	7,725	1,300	7,650	1,725	10,300	2,150	7,725
Production	38,050	34,650	37,275	36,575	52,275*	43,400*	51,700	41,675	33,100	33,775
Other	725	1,375	850	1,500	1,025	1,600	900	1,525	700	1,250
Total	**45,850**	**60,925**	**45,600**	**66,175**	**63,550***	**78,875***	**63,600**	**75,600**	**42,900**	**62,625**

	1979		1978		1977		1976		1975	
Marketing	975	2,775	950	2,290	775	1,895	625	1,555	650	1,550
Refining (a)	4,625	14,385	4,050	13,275	3,770	10,965	3,775	7,635	3,600	8,270
Transportation	1,450	6,575	1,350	7,380	2,300	8,060	3,900*	12,350*	3,725	11,510
Production	24,600	24,465	17,650	20,055	15,180	17,280	13,460	12,315	9,380	9,875
Other	550	1,225	475	980	445	980	325	785	370	735
Total	**32,200**	**49,425**	**24,475**	**43,900**	**22,400**	**39,180**	**22,085**	**34,640**	**17,725**	**31,900**

	1974		1973		1972		1971		1970	
Marketing	650	1,565	850	1,630	1,100	1,725	1,350	2,030	1,450*	1,770
Refinery (a)	2,600	7,115	1,475	4,565	1,350	4,995	1,550	4,740	1,625	3,900
Transportation	1,660	9,760	550	7,230	425	4,580	675	3,435	550	2,915
Production	11,450	8,085	7,440	5,485	5,915	4,190	3,385	3,830	4,335	2,895
Other	325	550	325	445	260	450	290	515	265	420
Total	**16,625**	**27,075**	**10,640**	**19,355**	**9,050**	**15,900**	**7,250**	**14,550**	**8,225**	**11,900**

	1969		1968		1967		1966		1965	
Marketing	1,250	1,555	1,150	1,515	1,250	1,455	1,100	1,310	1,000	1,430
Refinery (a)	1,525	2,995	1,450	2,980	1,600	2,550	1,575	2,435	1,125	1,665
Transportation	400	2,600	475	2,280	400	1,740	300	1,755	265	1,510
Production	4,750	2,790	4,925	2,535	4,025	1,975	3,770	1,870	3,760	2,025
Other	250	260	350	240	375	205	380	180	225	170
Total	**8,175**	**10,200**	**8,350**	**9,550**	**7,650**	**7,925**	**7,125**	**7,550**	**6,375**	**6,800**

(a) Includes chemicals and petrochemicals.

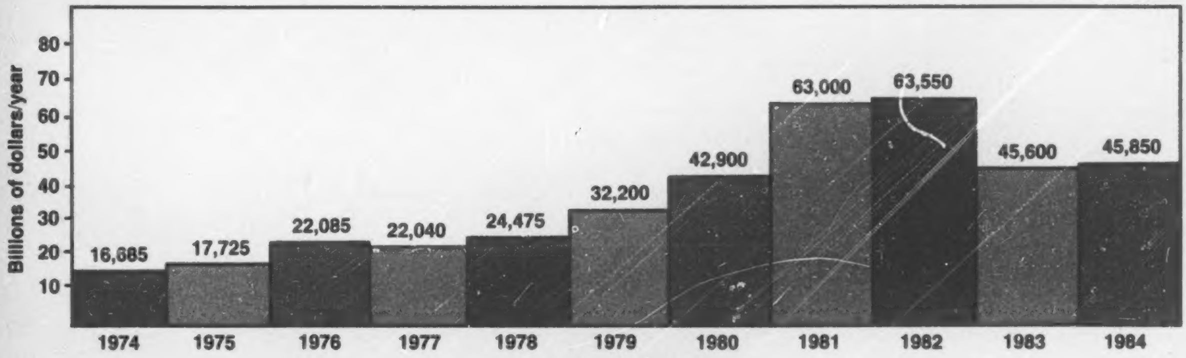
*Peak years are indicated with asterisks.

Source: Chase Manhattan Bank, Capital Investments in The World Petroleum Industry.

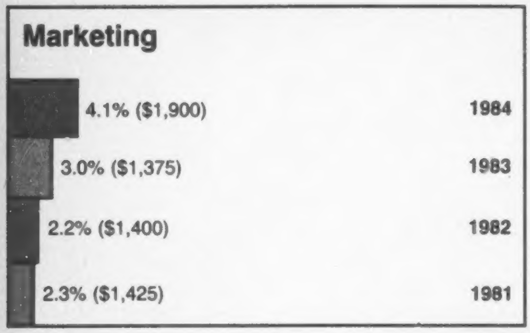
Capital Spending by U.S. Oil Companies

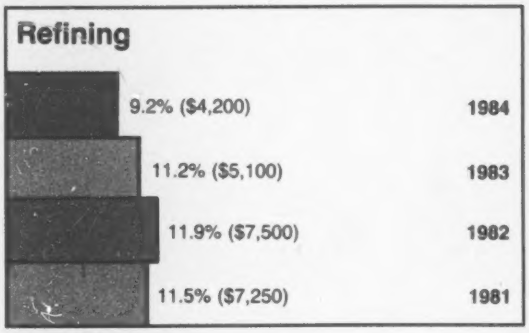
(millions of dollars)

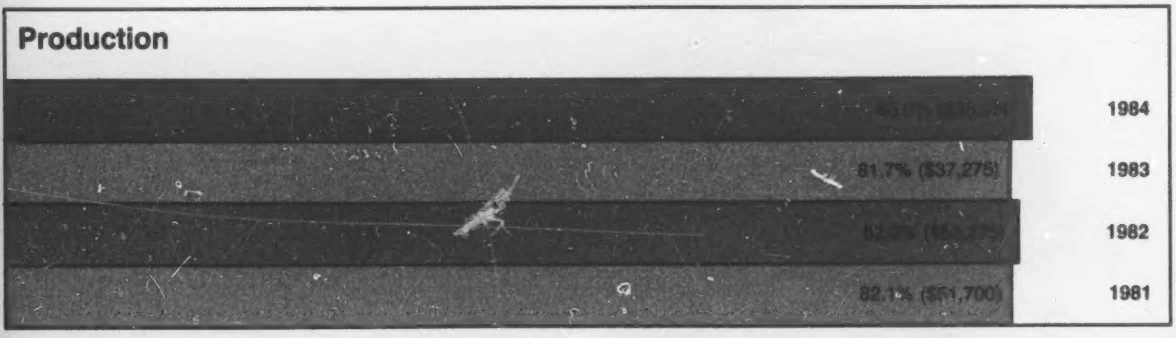
See note on preceding page about the availability of data covering the years 1985 and 1986.

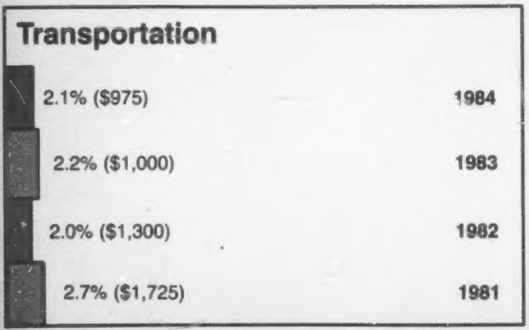


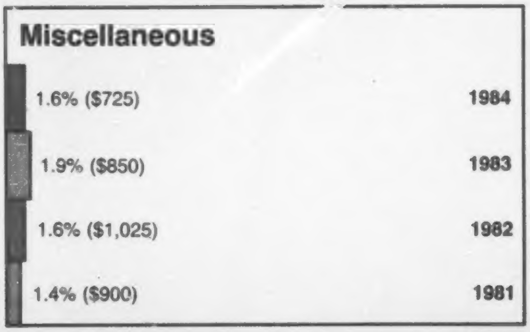
Spending by Divisions and Percentages


Marketing


Refining


Production


Transportation


Miscellaneous

Source: Chase Manhattan Bank, New York, NY

How Oil Companies Handle

Company	TOTAL BRANDED RETAIL OUTLETS	NUMBER OF STATES WHERE GASOLINE BRAND IS MARKETED†	BRANDED SERVICE STATIONS			
			Supplied Directly	Supplied Through Jobbers and Commissioned Agents	Lessee/ Dealer-operated	Salary-operated
Adams Resources & Energy, Inc.	128	1	80	48	76	4
Agway Petroleum Corp.	189	9	8	—	0	5
American Petrofina, Inc.	4,209(A)	24	122	3,245	11	111
Amoco Corp.	12,337(B)	30	4,159	8,178	4,057	102
Anchor Gasoline Corp.	108(C)	1	62	46	—	—
Ashland Oil, Inc.	715	16	—	—	—	—
Astroline Corp.	—	—	—	—	—	—
Atlantic Refining & Marketing Corp.	941	5	385	321	246	112
Atlantic Richfield Co.	1,719(D)	6	1,253	466	—	—
Atlas Oil Co. of Utica	0	0	—	—	—	—
Automatic Comfort Corp.	39	1	39	0	12	27
Bagwell Oil Co., Inc.	35	2	—	—	—	—
Best Oil Co.	19	1	15	4	2	17
Bostick Brothers, Inc.	4	1	4	0	0	0
Bradley Petroleum Inc.	33(Q)	3	33	0	1	32
Brennan Petroleum Co.	2	1	2	0	0	2
Browning Oil Co.	28	1	28	0	28	0
California Target Enterprises, Inc.	150	1	0	150	0	150
Campbell Oil Co.	83(X)	1	83	0	83	0
Cannon Oil Corp.	20	3	20	0	0	20
Cardon Corp.	39	4	34	5	0	39
Cenex	1,118	13	900	0	0	0
Champlain Oil Co	97	4	87	10	92	5
Charter Marketing Co.	404	9	61	0	61	0
Chevron Corp.	13,879	33	4,889	8,872	11,171	590
Cibro Gasoline Corp.	0	—	—	—	—	—
Cligo Petroleum Corp.	7,296(F)	39	0	1,800	—	—
Clark Oil & Refining Corp.	985	12	985	0	23	957
Coen Oil Co.	150	1	125	—	125	—
Colonial Oil Industries, Inc.	63(G)	3	63	0	0	20
Como Oil Co.	15	2	3	7	9	1
Conna Corp.	265	9	—	—	—	—
Conoco Inc.	6,860(H)	40	2,568	4,292	6,391	469
Consumers Gasoline Stations	29	3	29	0	0	29
Consumers Oil	35	2	35	0	20	8
Crystal Flash Petroleum	20	1	20	0	0	20
C.S.C. Oil Co.	22	2	15	0	0	15
Curtis Parker Oil Co. Inc.	27	1	0	18	18	0
K.E. David, Ltd.	13	1	13	0	6	6
DeBlois Oil Co.	40(I)	2	38	0	9	29
Derby Refining Co.	784	23	531	253	—	—
Desert Counties Oil	15	1	15	0	15	0
Diamond Shamrock Refining & Marketing Co.	2,016	12	0	1,476	—	540
Dickey Inc.	8	1	8	0	4	4
Drakes Refinery Stations	13	1	0	13	0	13
DWF, Inc.	11	3	11	0	—	—
East Coast Oil Corp.	35	1	35	0	0	35
Emro Marketing Co.	1,334	18	1,334	0	0	1,334
Engelfield Oil Co.	245	2	245	0	195	50
Exxon Co., U.S.A.	14,468	37	5,125	9,343	4,875	553
Fas-Stop, Inc.	5	1	5	0	0	5
F.O. Fletcher Oil, Inc.	2	2	0	2	0	2
Flying J Inc.	63	10	52	11	0	63
Fortmeyer Inc.	2	1	2	0	—	—
Foster Oil Co.	22	1	5	0	5	0
Franko Oil Co.	50	2	50	0	10	40
Fuelman, Inc.	36	2	32	4	0	36
H.N. Funkhouser & Co.	24	3	0	6	2	—

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† Includes District of Columbia
(A) Includes Fina Oil and Chemical Co., Finaserve, Inc.
(B) Includes Omega Oil
(B1) Figures are *NPN* estimates based on company-supplied percentage ranges on direct-supplied stations only
(C) Includes Canal Refining Co., Cove Petroleum Corp., Anchor Coal Co., Bay Petroleum Corp., Clear Creek Coal Co.
(D) Includes Prestige Stations, Inc.

Product Distribution

				BRANDED JOBBERS/COMMISSIONED AGENTS			
					Number selling . . .		
Commission-operated	Full-service only	Self-service only	Self-service/ Full-service	Total	Gasoline only	Fuel Oil only	Gasoline/ Fuel Oil
—	35	32	61	17	—	—	17
3	—	8	—	70	51	0	19
0	337	2,020	1,010	523	0	0	523
—	620(B1)	1,140(B1)	3,150(B1)	1,454	—	—	—
—	0	62	46	12	2	0	10
—	—	—	—	—	—	—	—
—	—	—	—	0	—	—	—
7	34	411	241	73	8	0	65
—	—	—	—	42	42	0	0
—	—	—	—	—	—	—	—
0	—	—	—	0	—	—	—
—	—	—	—	—	—	—	—
0	1	17	1	—	—	—	—
4	1	3	0	—	—	—	—
0	0	33	0	0	—	—	—
0	0	2	0	0	—	—	—
0	0	2	26	—	—	—	—
0	0	150	0	—	—	—	—
0	10	30	43	5	—	—	5
0	0	20	0	—	—	—	—
0	0	39	0	5	5	0	0
0	0	750	150	1,188	10	30	1,148
0	55	34	8	3	0	0	3
0	10	51	0	0	—	—	—
0	3,538(E)	3,507(E)	4,716(E)	1,136	0	69	725
—	—	—	—	—	—	—	—
—	—	—	—	327	—	—	—
0	10	945	30	0	—	—	—
—	25	0	100	—	—	—	—
43	2	2	59	0	—	—	—
0	4	1	5	—	—	—	—
—	—	—	—	265	—	—	4
0	1,377	3,940	1,543	738	—	—	—
0	5	22	2	0	—	—	—
7	35	0	0	—	—	—	—
0	0	17	3	3	0	0	3
0	0	12	3	0	—	—	—
0	8	5	5	3	0	0	3
1	12	1	0	—	—	—	—
0	21	17	0	—	—	—	—
—	—	—	—	87	0	0	87
0	0	10	5	0	—	—	—
—	81(J)	1,915(J)	20(J)	153	153	—	—
0	2	3	3	8	6	0	2
0	2	10	1	—	—	—	—
—	5	4	2	—	—	—	—
0	0	32	33	0	—	—	—
0	5	1,322	7	0	—	—	—
0	48	66	131	5	0	0	5
—	—	—	—	817	—	4	—
0	0	4	1	0	—	—	—
0	1	1	0	10	10	0	0
0	0	63	0	10	10	0	0
—	2	0	0	—	—	—	—
0	4	0	1	0	—	—	—
0	41	9	0	0	—	—	—
0	0	36	0	1	0	0	1
—	1	0	5	2	0	0	2

(E) Estimated
(F) Includes Citgo branded 7-Elevens
(G) Includes Interstate Stations, Inc.
(H) Includes Kayo Oil Co.

BULK PLANTS				TERMINALS				
Company-operated				Company-operated				
Total	Salary-operated	Commission-operated	Jobber-operated Bulk Plants	Total	Salary-operated	Commission-operated	Jobber-operated Terminals	Company
3	2	1	15	—	—	—	—	Adams Resources & Energy, Inc.
111	111	0	19	11	11	0	0	Agway Petroleum Corp.
0	0	0	410	9	9	0	1	American Petrofina, Inc.
0	0	0	1,781	85	85	0	—	Amoco Corp.
10	0	10	2	1	1	0	0	Anchor Gasoline Corp.
—	—	—	—	—	—	—	—	Ashland Oil, Inc.
—	—	—	—	2	2	0	—	Astroline Corp.
0	0	0	0	19	19	0	13	Atlantic Refining & Marketing Corp.
0	0	0	—	30	—	—	—	Atlantic Richfield Co.
1	—	—	—	1	—	—	—	Atlas Oil Co. of Utica
[illegible]	—	—	0	1	1	0	0	Automatic Comfort Corp.
2	2	0	—	1	1	0	—	Bagwell Oil Co., Inc.
—	—	—	—	—	—	—	—	Best Oil Co.
2	2	0	—	1	1	0	—	Bostick Brothers, Inc.
0	—	—	—	0	—	—	—	Bradley Petroleum Inc.
0	—	—	0	0	—	—	0	Brennan Petroleum Co.
2	2	0	—	0	—	—	—	Browning Oil Co.
—	—	—	—	—	—	—	—	California Target Enterprises, Inc.
4	4	0	5	0	—	—	—	Campbell Oil Co.
—	—	—	—	—	—	—	—	Cannon Oil Corp.
—	—	—	—	—	—	—	—	Cardon Corp.
1,000	1,000	0	—	0	—	—	0	Cenex
0	—	—	—	0	—	—	—	Champlain Oil Co.
0	—	—	—	0	—	—	—	Charter Marketing Co.
930	0	4	926	107	83	0	2	Chevron Corp.
1	1	0	—	1	1	0	—	Cibro Gasoline Corp.
0	—	—	—	39	39	0	—	Citgo Petroleum Corp.
—	—	—	—	—	—	—	—	Clark Oil & Refining Corp.
1	—	—	—	0	—	—	—	Coen Oil Co.
1	1	0	105	2	2	0	0	Colonial Oil Industries, Inc.
1	0	1	0	—	—	—	—	Como Oil Co.
0	—	—	—	0	—	—	—	Conna Corp.
28	9	19	—	53	53	0	—	Conoco Inc.
—	—	—	—	—	—	—	—	Consumers Gasoline Stations
1	1	0	—	—	—	—	—	Consumers Oil
5	3	—	—	0	—	—	—	Crystal Flash Petroleum
0	0	0	0	0	0	0	0	C.S.C. Oil Co.
3	1	2	—	0	—	—	—	Curtis Parker Oil Co. Inc.
3	3	0	—	—	—	—	—	K.E. David, Ltd.
3	3	0	—	—	—	—	—	DeBlois Oil Co.
0	—	—	0	0	—	—	0	Derby Refining Co.
1	1	0	0	0	—	—	—	Desert Counties Oil
2	2	0	0	12	12	0	0	Diamond Shamrock Refining & Marketing Co.
3	3	0	0	0	—	—	—	Dickey Inc.
—	—	—	—	—	—	—	—	Drakes Refinery Stations
—	—	—	—	—	—	—	—	DWF, Inc.
—	—	—	—	—	—	—	—	East Coast Oil Corp.
1	—	—	—	0	—	—	—	Emro Marketing Co.
10	9	1	—	—	—	—	—	Englefield Oil Co.
0	—	—	—	63	63	0	—	Exxon Co., U.S.A.
0	—	—	—	0	—	—	—	Fas-Stop, Inc.
0	—	—	—	0	—	—	—	F.O. Fletcher Oil, Inc.
0	—	—	7	6	3	3	0	Flying J Inc.
1	—	—	0	—	—	—	0	Fortmeyer, Inc.
2	2	0	0	0	—	—	—	Foster Oil Co.
0	—	—	—	0	—	—	—	Franko Oil Co.
1	1	0	—	1	—	—	—	Fuelman, Inc.
2	2	0	—	0	—	—	—	H.N. Funkhouser & Co.

(I) Includes Beacon Oil Co.
(J) NPN projections based on percentages provided in survey
(K) Includes Anchor Refining Inc., Desert Petroleum, Inc.
(L) Includes Marlen Gas Co.

How Oil Companies Handle

			BRANDED SERVICE STATIONS			
COMPANY	TOTAL BRANDED RETAIL OUTLETS	NUMBER OF STATES WHERE GASOLINE BRAND IS MARKETED	Supplied Directly	Supplied Through Jobbers and Commissioned Agents	Lessee/ Dealer-operated	Salary-operated
The Gas King Corp.	6	5	0	6	0	0
Gasco Gasoline, Inc.	62(K)	1	62	0	0	52
Geldbach Petroleum Co., Inc.	4(L)	1	2	—	2	—
General Oil Co.	32	1	32	0	0	32
Getty Petroleum Corp.	2,191(M)	11	1,472	514	1,267	205
Global Petroleum Corp.	90(N)	2	90	0	70	20
Godwin Oil Co.	19	1	—	—	—	—
Golden Gate Petroleum Co.	—	—	—	—	—	—
Gresham Petroleum Co.	25	1	25	0	0	25
Gulf Oil	4,180	11	1,375	2,525	499	65
Gull Industries Inc.	110	2	110	0	0	15
Harris Enterprises Inc.	26	2	26	0	24	2
Highway Oil, Inc.	212(O)	22	212	0	0	180
Hill Petroleum Co.	—	—	—	—	—	—
Angus I. Hines, Inc.	64(P)	3	64	0	—	—
Hop-In Food Stores	5	2	—	—	—	—
Hull Oil Co.	35	2	22	13	13	6
J. & L. Oil, Inc.	59	3	56	—	—	52
Joe Bob's Food Stores, Inc.	57	1	57	0	19	38
Kellam Energy, Inc.	163(R)	3	57	0	54	3
Kellett Oil Co.	33	5	8	—	25	—
Kelley Williamson Co.	45	2	23	0	23	0
Kent Oil, Inc.	19	1	19	0	0	16
Kerr-McGee Refining Corp.	1,960	22	126	1,834	1,890	70
Kickapoo Oil Co., Inc.	60	1	6	0	0	6
Kimber Petroleum Corp.	110	1	110	0	98	12
Kirschner Bros. Oil Co.	31	2	31	0	0	31
Kunz Oil Co.	37	1	37	0	12	25
Kwik Shop, Inc.	134	4	—	—	—	—
Lake Shore Petrocorp	37	2	0	37	34	3
Lyden Oil Co.	165	1	104	0	101	3
Marathon Petroleum Co.	2,395	6	647(J)	1,748(J)	407(J)	0
McDowell Oil Service Inc.	31	1	31	0	0	0
McLeieer Oil, Inc.	62	1	0	62	1	2
M.G.S. Oil, Petroleum & General Trading Corp.	8	1	8	0	—	—
Mid-Missouri Oil Co.	15	1	1	4	3	2
Mid-States Petroleum	108	3	108	0	75	28
Midwest Petroleum Co.	145(S)	2	145	0	65	80
Miller Oil Co.	68(T)	2	15	0	15	0
Missouri Terminal Oil Co.	—	—	—	—	—	—
Mobil Oil Corp	12,619	40	5,263	7,356	12,069	550
Murphy Oil USA, Inc.	569	14	431	138	191	0
Musket Corp.	136	8	136	0	0	136
National Convenience Stores, Inc.	—	—	—	—	—	—
National Oil & Gas Inc.	85	2	70	10	50	3
Neal, Inc.	35	1	—	—	—	—
Newell Oil Co., Inc.	16	1	0	8	9	—
Newhall Refining Co., Inc.	—	—	—	—	—	—
NOCO Energy Corp.	24	1	24	0	0	24
Olympian Oil Co.	43	1	28	0	28	0
Parker Oil Co. Inc.	190	3	10	0	—	—
Patterson Oil Co., Inc.	35	1	35	0	22	13
PDQ Food Stores, Inc.	86(U)	6	—	—	—	—
Pennzoil Products Co.	597	7	74	523	577	20
Peeter Marketing Co.	220	11	220	0	8	212
Petrotex Marketing Inc.	22	1	0	8	5	0
Phillips 66 Co.	10,669	37	220	10,449	10,463	206
Pilot Oil Corp.	107	17	107	0	0	107
Pride of Texas Dist. Co	24	1	9	0	9	0
Pride Oil Co. Inc. (Miss.)	21	2	21	0	0	1
Pride Oil Co., Inc. (Tenn.)	12	1	12	0	0	12
Quaker State Oil Refining Corp.	196	4	4	192	—	4

(M) Includes Aero Oil Co., Kingston Oil Supply Co.

(N) Includes Carl King Inc., an affiliate.

(O) Includes Hi-Lo Oil Co., Inc., Workingman's Friend Oil, Inc., Fairway Oil Inc., affiliates.

(P) Includes Franklin Oil Co., Sentry Petroleum, Inc., Service Gas Co.

Product Distribution (cont'd.)

				BRANDED JOBBERS/COMMISSIONED AGENTS			
					Number selling . . .		
Commission-operated	Full-service only	Self-service only	Self-service/ Full-service	Total	Gasoline only	Fuel Oil only	Gasoline/ Fuel Oil
0	1	5	0	—	—	—	—
10	0	62	0	0	—	—	—
—	—	—	2	2	—	—	—
0	0	32	0	1	1	0	0
0	—	—	—	50	—	—	—
0	70	20	0	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
0	1	22	2	—	—	—	—
—	2,145	975	780	110	66	0	44
95	20	90	0	—	—	—	—
0	0	2	24	—	—	—	—
32	100	32	80	0	—	—	—
—	—	—	—	0	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	31	29	0	2
16	0	32	3	1	0	0	1
4	3	53	—	—	—	—	—
0	0	57	0	—	—	—	—
0	5	44	8	—	—	—	—
—	1	20	12	4	0	0	4
0	15	0	8	5	0	0	5
3	0	19	0	—	—	—	—
0	101	1,102	757	449	16	5	428
0	0	6	0	—	—	—	—
0	110	0	0	0	—	—	—
0	21	10	0	31	31	0	0
0	21	13	3	0	—	—	—
—	—	—	—	—	—	—	—
0	21	7	9	0	—	—	—
0	6	4	94	—	—	—	—
0	599(J)	359(J)	1,437(J)	121	0	1	99
31	0	31	0	0	—	—	—
59	10	25	27	7	—	—	7
—	8	0	0	—	—	—	—
0	0	0	5	—	—	—	—
5	44	28	36	7	0	1	6
0	15	90	40	0	—	—	—
0	6	1	8	0	—	—	—
—	—	—	—	7	0	0	7
0	2,241	2,411	7,967	1,297	1	394	202
0	20	529	20	0	—	—	—
0	0	136	0	—	—	—	—
—	—	—	—	—	—	—	—
27	10	10	60	14	0	0	14
—	—	—	—	—	—	—	—
7	3	8	5	—	—	—	—
—	—	—	—	—	—	—	—
0	12	8	4	2	0	0	2
0	3	0	25	0	—	—	—
—	1	0	9	—	—	—	—
0	10	9	16	0	—	—	—
—	—	—	—	—	—	—	—
0	502	20	75	164	—	—	64
0	0	212	8	—	—	—	—
3	0	0	8	0	—	—	—
0	3,371(E)	5,335(E)	1,963(E)	1,469	53	5	1,411
0	0	107	0	0	—	—	—
0	0	0	9	—	—	—	—
20	0	20	1	—	—	—	—
0	0	12	0	0	—	—	—
0	196	0	0	64	62	59	58

(Q) Includes Sav-O-Mat Inc.
(R) Includes Shore Stop.
(S) Includes Bolch Oil Co.
(T) Includes Miller Co. South.

BULK PLANTS				TERMINALS				
	Company-operated				Company-operated			
Total	Salary-operated	Commission-operated	Jobber-operated Bulk Plants	Total	Salary-operated	Commission-operated	Jobber-operated Terminals	Company
—	—	—	—	—	—	—	—	The Gas King Corp.
1	1	0	—	0	—	—	—	Gasco Gasoline, Inc.
2	2	0	0	2	2	0	0	Geldbach Petroleum Co., Inc.
1	1	0	—	—	—	—	—	General Oil Co.
13	13	0	0	21	21	0	—	Getty Petroleum Corp.
—	—	—	—	44	5	0	39	Global Petroleum Corp.
1	—	—	—	—	—	—	—	Godwin Oil Co.
2	2	0	0	2	2	0	0	Golden Gate Petroleum Co.
5	5	0	0	—	—	—	—	Gresham Petroleum Co.
0	0	0	—	19	19	0	44	Gulf Oil
2	—	—	—	—	—	—	—	Gull Industries Inc.
3	—	—	—	—	—	—	—	Harris Enterprises Inc.
0	—	—	—	0	—	—	—	Highway Oil, Inc.
0	—	—	—	1	1	—	—	Hill Petroleum Co.
4	4	0	—	0	—	—	—	Angus I. Hines, Inc.
0	—	—	—	0	—	—	—	Hop-In Food Stores
1	0	1	0	0	—	—	—	Hull Oil Co.
0	—	—	—	0	—	—	—	J. & L. Oil, Inc.
0	—	—	—	0	—	—	—	Joe Bob's Food Stores, Inc.
8	8	0	—	0	—	—	—	Kellam Energy, Inc.
2	1	1	5	—	—	—	—	Kellett Oil Co.
6	2	3	1	0	—	—	—	Kelley Williamson Co.
—	—	—	—	—	—	—	—	Kent Oil, Inc.
1	1	0	350	20	20	0	2	Kerr-McGee Refining Corp.
0	—	—	—	0	—	—	—	Kickapoo Oil Co., Inc.
0	—	—	—	0	—	—	—	Kimber Petroleum Corp.
—	—	—	—	—	—	—	—	Kirschner Bros. Oil Co.
0	—	—	—	0	—	—	—	Kunz Oil Co.
—	—	—	—	—	—	—	—	Kwik Shop, Inc.
0	—	—	—	0	—	—	—	Lake Shore Petrocorp
3	3	0	—	0	—	—	—	Lyden Oil Co.
335	0	0	135	52	0	0	0	Marathon Petroleum Co.
1	1	0	0	0	—	—	—	McDowell Oil Service Inc.
4	3	1	—	—	—	—	—	McLeieer Oil, Inc.
—	—	—	—	—	—	—	—	M.G.S. Oil, Petroleum & General Trading Corp.
—	—	—	—	—	—	—	—	Mid-Missouri Oil Co.
9	5	0	4	1	0	1	—	Mid-States Petroleum
0	—	—	0	0	—	—	0	Midwest Petroleum Co.
4	4	0	0	1	1	—	—	Miller Oil Co.
0	0	0	0	1	1	0	0	Missouri Terminal Oil Co.
10	0	10	1,106	75	75	0	0	Mobil Oil Corp.
0	—	—	—	22	22	0	—	Murphy Oil USA, Inc.
—	—	—	—	—	—	—	—	Musket Corp.
1	1	0	—	0	—	—	—	National Convenience Stores, Inc.
13	0	13	—	0	—	—	—	National Oil & Gas Inc.
—	—	—	—	—	—	—	—	Neal, Inc.
—	—	—	—	—	—	—	—	Newell Oil Co., Inc.
—	—	—	—	1	—	—	—	Newhall Refining Co., Inc.
4	4	0	0	1	1	0	0	NOCO Energy Corp.
0	—	—	—	—	—	—	—	Olympian Oil Co.
11	11	0	—	1	1	0	—	Parker Oil Co. Inc.
1	—	—	—	0	—	—	—	Patterson Oil Co., Inc.
—	—	—	—	—	—	—	—	PDQ Food Stores, Inc.
9	3	0	6	3	3	0	—	Pennzoil Products Co.
—	—	—	—	—	—	—	—	Pester Marketing Co.
1	1	0	—	0	—	—	—	Petrotex Marketing Inc.
1	0	1	—	30	30	0	4	Phillips 66 Co.
0	—	—	—	0	—	—	—	Pilot Oil Corp.
—	—	—	—	—	—	—	—	Pride of Texas Dist. Co.
0	—	—	—	0	—	—	—	(Miss.) Pride Oil Co. Inc.
0	—	—	—	0	—	—	—	(Tenn.) Pride Oil Co., Inc.
1	—	—	1	0	—	—	—	Quaker State Oil Refining Corp.

(U) Includes Kwik-Way Stores, Inc.
(V) Includes Mission Trail Oil Co.
(W) Includes Boron Oil Co., BP Oil Co., Gulf Products Division
(X) Includes Steiner Oil Co.

Company	TOTAL BRANDED RETAIL OUTLETS	NUMBER OF STATES WHERE GASOLINE BRAND IS MARKETED	BRANDED SERVICE STATIONS			
			Supplied Directly	Supplied Through Jobbers and Commissioned Agents	Lessee/Dealer-operated	Salary-operated
Quortrup Petroleum Co.	**3**	**1**	**—**	**—**	**—**	**—**
Racetrac Petroleum, Inc.	**309**	**13**	**—**	**—**	**—**	**—**
RECO Petroleum, Inc.	**112**	**4**	**33**	**0**	**9**	**24**
Reinauer Petroleum Co.	14	1	14	0	14	0
Remote Services, Inc.	265	9	—	—	—	—
River Oil Co.	47	2	47	0	47	0
Robinson Oil Co., Inc.	**24(V)**	**1**	**24**	**0**	**0**	**24**
Russell Petroleum Corp.	**55**	**1**	**8**	**0**	**4**	**0**
Sahara Oil Co., Inc.	**25**	**1**	**3**	**—**	**3**	**20**
Save-X, USA, Inc.	—	—	—	—	—	—
Schaeffer Oil, Inc.	5	1	—	—	—	—
Shay Oil Co., Inc.	18	2	18	0	3	15
Shelby Petroleum Corp.	**20**	**2**	**20**	**0**	**0**	**20**
Shell Oil Co.	**11,133**	**41**	**4,739**	**—**	**4,421**	**318**
Shotmeyer Bros. Petroleum Corp.	**72**	**1**	**72**	**0**	**22**	**0**
Sinclair Oil Corp.	2,479	24	—	—	—	—
R.L. Smeltz Oil Co., Inc.	20	1	—	—	—	—
SOS Oil Corp.	62	1	57	0	57	0
Southern Counties Oil Co.	**30**	**1**	**30**	**0**	**21**	**9**
Southern Oil Co., Inc.	**13**	**1**	**0**	**6**	**3**	**1**
The Spencer Companies, Inc.	**58**	**1**	**0**	**5**	**5**	**0**
Standard Oil Co. (Ohio)	7,623(W)	29	2,815	4,808	1,323	1,094
Stevens Oil Co.	48	1	0	13	13	0
Sugarcreek Corp.	200	3	196	4	100	80
Sumrall Oil Services, Inc.	**78**	**1**	**3**	**0**	**0**	**3**
Sun Refining & Marketing Co.	**5,662(Y)**	**29**	**2,324**	**3,150**	**5,427**	**47**
Sunshine Jr. Stores, Inc.	**25**	**2**	**—**	**—**	**—**	**—**
Tartan Oil Corp.	55	1	—	—	—	—
Taylor Oil Co.	56	2	56	0	0	0
Texaco Inc.	18,939	46	3,361	15,578	2,458	286
Texas City Refining, Inc.	**21(Z)**	**3**	**21**	**0**	**0**	**21**
Thornhill Oil Co., Inc.	**29**	**1**	**—**	**—**	**—**	**—**
Tooley Oil Co.	**9**	**1**	**—**	**—**	**—**	**9**
Torco Oil Co.	39	1	39	0	38	1
Tosco Corp.	—	—	—	—	—	—
Total Petroleum, Inc.	1,915	19	424	1,491	1,118	424
Town Pump Inc. & Affiliates	**60**	**1**	**—**	**—**	**—**	**—**
Transit Oil Co.	**25**	**2**	**25**	**0**	**0**	**25**
Trenton Oil Co., Inc.	**44**	**1**	**44**	**0**	**38**	**0**
Triton Inc.	44	4	44	0	0	44
Ultra Power Corp.	5	1	5	0	3	0
United Refining Co.	285	3	285	0	0	285
Unocal Corp.	**10,633**	**41**	**2,880**	**7,753**	**2,734**	**146**
Vista Marketing Group Ltd.	**16**	**4**	**16**	**0**	**0**	**16**
Waco Oil Co., Inc.	**16**	**2**	**16**	**0**	**0**	**16**
Wake Up Oil Co., Inc.	40	1	40	0	1	39
Warelubco, Inc.	93	5	93	0	0	93
Warren Equities, Inc.	269(AA)	8	269	0	86	183
Webster Oil Co.	**21**	**1**	**12**	**0**	**12**	**0**
West Penn Oil Co., Inc.	**—**	**—**	**—**	**—**	**—**	**—**
Western Marketing, Inc.	**29**	**1**	**29**	**0**	**0**	**11(BB)**
Wickland Oil Co.	85	3	85	—	—	85
Willard Oil Co., Inc.	27(CC)	1	20	0	12	8
A.T. Williams Oil Co.	77	2	77	0	0	77
J.H. Williams Oil Co., Inc.	**83(DD)**	**1**	**44**	**1**	**42**	**3**
The Wills Group, Inc.	**90(EE)**	**3**	**90**	**0**	**36**	**29**
York Oil Co., Inc.	**11(FF)**	**1**	**1**	**—**	**—**	**—**
Zephyr Inc.	—	—	—	—	—	—

(Y) Includes Herr Gas & Oil Co., Mid-State Oil Co., Montour Auto Service Co., Mascot Petroleum Co., Stop-N-Go Foods, Inc., King-Kwik Minit Markets, Inc.
(Z) Includes TCR, Inc.
(AA) Includes Drake Petroleum Co., Inc., Kenyon Oil Co., Mid-Valley Oil Co., Puritan Oil Co.
(BB) Eighteen outlets are unattended cardlock units.

				BRANDED JOBBERS/COMMISSIONED AGENTS			
					Number selling . . .		
Commission-operated	Full-service Only	Self-service Only	Self-service/ Full-service	Total	Gasoline Only	Fuel oil Only	Gasoline/ Fuel Oil
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
0	0	0	33	0	—	—	—
0	14	0	0	0	—	—	—
—	—	—	—	265	—	—	4
0	—	—	—	—	—	—	—
0	0	24	0	0	—	—	—
4	0	0	8	0	—	—	—
2	1	22	2	—	—	—	—
—	—	—	—	3	3	—	—
—	—	—	—	—	—	—	—
0	0	18	0	1	1	—	—
0	20	0	0	—	—	—	—
—	474	1,422	2,843	551	—	—	—
50	72	0	0	0	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
0	30	5	27	0	—	—	—
0	5	25	0	0	—	—	—
2	4	0	2	2	2	0	0
0	2	0	3	2	0	0	2
398	—	—	—	509	160	—	—
0	8	0	5	—	—	—	—
20	25	90	85	200	190	—	10
0	0	3	0	—	—	—	—
—	—	—	—	3,150	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
56	0	56	0	0	—	—	—
617	3,220	8,712	7,007	1,310	—	—	—
0	0	21	0	0	—	—	—
—	—	—	—	—	—	—	—
—	—	9	—	—	—	—	—
0	10	10	19	4	0	0	4
—	—	—	—	—	—	—	—
373	0	1,435	480	540	0	0	540
—	—	—	—	—	—	—	—
0	0	23	2	—	—	—	—
6	44	0	0	7	6	0	1
0	0	43	1	0	—	—	—
2	0	5	0	2	—	—	—
0	156	126	3	—	—	—	—
—	100	3,005	7,528	608	—	—	—
0	0	16	0	—	—	—	—
0	4	12	0	—	—	—	—
0	2	0	38	0	—	—	—
0	1	11	81	—	—	—	—
0	70	141	58	0	—	—	—
0	0	0	12	—	—	—	—
—	—	—	—	—	—	—	—
0	0	29	0	1	0	0	1
—	1	84	—	—	0	—	—
0	5	11	4	—	—	—	—
0	0	77	0	—	—	—	—
0	0	3	42	1	0	0	1
25	—	—	—	1	0	0	1
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

(CC) Includes Meador Oil Co., Inc.
(DD) Includes Pioneer Oil Co., 75 Mini-Marts, Inc.
(EE) Includes SMO, Inc., Cash In Food Stores, Inc., Southern Maryland Oil, Inc., Delmarva Oil, Inc.
(FF) Includes Easy Go Stores.

BULK PLANTS				TERMINALS				
Company-operated				Company-operated				
Total	Salary-operated	Commission-operated	Jobber-operated Bulk Plants	Total	Salary-operated	Commission-operated	Jobber-operated Terminals	Company
—	—	—	—	—	—	—	—	Quortrup Petroleum Co.
—	—	—	—	—	—	—	—	Racetrac Petroleum, Inc.
0	—	—	—	0	—	—	—	RECO Petroleum, Inc.
—	—	—	—	—	—	—	—	Reinauer Petroleum Co.
0	—	—	—	0	—	—	—	Remote Services, Inc.
3	2	1	—	—	—	—	—	River Oil Co.
0	—	—	—	0	—	—	—	Robinson Oil Co., Inc.
1	1	0	0	1	1	0	0	Russell Petroleum Corp.
2	0	2	2	—	—	—	0	Sahara Oil Co., Inc.
1	1	0	—	0	—	—	—	Save-X, USA, Inc.
—	—	—	—	—	—	—	—	Schaeffer Oil, Inc.
1	1	—	—	—	—	—	—	Shay Oil Co., Inc.
1	1	0	0	0	—	—	—	Shelby Petroleum Corp.
0	0	0	641	90	76	15	—	Shell Oil Co.
1	1	0	—	0	—	—	—	Shotmeyer Bros. Petroleum Corp.
—	—	—	—	—	—	—	—	Sinclair Oil Corp.
2	—	—	—	—	—	—	—	R.L. Smeltz Oil Co., Inc.
1	1	0	—	0	—	—	—	SOS Oil Corp.
4	4	0	0	0	—	—	—	Southern Counties Oil Co.
1	1	0	—	—	—	—	—	Southern Oil Co., Inc.
0	—	—	2	0	—	—	—	The Spencer Companies, Inc.
99	0	99	—	51	51	—	—	Standard Oil Co. (Ohio)
1	—	—	1	—	—	—	—	Stevens Oil Co.
12	12	—	—	3	3	—	—	Sugarcreek Corp.
—	—	—	—	—	—	—	—	Sumrall Oil Services, Inc.
—	—	—	—	37	—	—	—	Sun Refining & Marketing Co.
—	—	—	—	—	—	—	—	Sunshine Jr. Stores, Inc.
—	—	—	—	—	—	—	—	Tartan Oil Corp.
0	—	—	—	2	2	—	—	Taylor Oil Co.
1,302	—	—	1,302	71	70	1	—	Texaco Inc.
0	—	—	—	2	2	0	—	Texas City Refining, Inc.
3	2	0	1	0	—	—	—	Thornhill Oil Co., Inc.
—	—	—	—	—	—	—	—	Tooley Oil Co.
—	—	—	—	29	—	—	—	Torco Oil Co.
—	—	—	—	21	4	17	—	Tosco Corp.
89(E)	2	—	87(E)	8	8	0	—	Total Petroleum, Inc.
—	—	—	—	—	—	—	—	Town Pump Inc. & Affiliates
0	—	—	—	0	—	—	—	Transit Oil Co.
1	—	—	1	—	—	—	—	Trenton Oil Co., Inc.
0	—	—	—	1	—	—	—	Triton Inc.
1	—	—	0	0	—	—	0	Ultra Power Corp.
0	—	—	—	2	2	—	—	United Refining Co.
523	51	152	523	—	—	—	—	Unocal Corp.
—	—	—	—	—	—	—	—	Vista Marketing Group Ltd.
—	—	—	—	—	—	—	—	Waco Oil Co., Inc.
0	—	—	—	0	—	—	—	Wake Up Oil Co., Inc.
—	—	—	—	—	—	—	—	Warelubco, Inc.
7	7	0	0	1	1	0	0	Warren Equities, Inc.
1	1	—	—	—	—	—	—	Webster Oil Co.
1	1	0	—	1	1	0	—	West Penn Oil Co., Inc.
1	1	0	—	0	—	—	—	Western Marketing, Inc.
0	—	—	—	1	1	—	—	Wickland Oil Co.
2	2	0	—	—	—	—	—	Willard Oil Co., Inc.
—	—	—	—	—	—	—	—	A.T. Williams Oil Co.
4	3	1	—	0	—	—	—	J.H. Williams Oil Co. Inc.
14	8	1	0	1	1	0	0	The Wills Group, Inc.
—	—	—	—	—	—	—	—	York Oil Co., Inc.
—	—	—	—	2	1	—	—	Zephyr Inc.

Branded Retail Outlets

Company	TOTAL BRANDED RETAIL OUTLETS	NUMBER OF STATES WHERE GASOLINE BRAND IS MARKETED†	New England						Middle Atlantic		
			Maine	N.H.	Vt.	Mass.	R.I.	Conn.	N.Y.	N.J.	Pa.
Agway Petroleum Corp.	189	9	7	5	8	8	1	2	109	36	37
American Petrofina, Inc.	4,209(A)	24	—	—	—	—	—	—	—	—	—
Amoco Corp.	12,337(B)	30	—	—	—	—	—	175	353	364	711
Ashland Oil, Inc.	715	16	—	—	—	—	—	—	—	—	13
Atlantic Refining & Marketing Corp.	941	5	—	—	—	—	—	—	253	19	664
Automatic Comfort Corp.	39	1	—	—	—	—	—	39	—	—	—
Bagwell Oil Co., Inc.	35	2	—	—	—	—	—	—	—	—	—
Best Oil Co.	19	1	—	—	—	—	—	—	—	—	19
Bostick Brothers, Inc.	4	1	—	—	—	—	—	—	—	—	—
Browning Oil Co.	28	1	—	—	—	—	—	—	—	—	—
Campbell Oil Co.	83(X)	1	—	—	—	—	—	—	—	—	—
Cannon Oil Corp.	20	3	—	—	—	—	—	—	—	—	—
Cardon Corp.	39	4	—	—	—	—	—	—	—	—	—
Cenex	1,188	13	—	—	—	—	—	—	—	—	—
Champlain Oil Co.	97	4	—	11	79	1	—	—	6	—	—
Charter Marketing Co.	404	9	2	10	—	49	—	65	—	—	—
Chevron Corp.	13,879	33	—	—	—	—	—	—	—	—	4
Citgo Petroleum Corp.	7,296(F)	39	137	98	76	270	23	108	503	198	279
Clark Oil & Refining Corp.	985	12	—	—	—	—	—	—	—	—	5
Coen Oil Co.	150	1	—	—	—	—	—	—	—	—	—
Colonial Oil Industries, Inc.	63(G)	3	—	—	—	—	—	—	—	—	—
Como Oil Co.	15	2	—	—	—	—	—	—	—	—	—
Conna Corp.	265	9	—	4	—	—	—	—	14	—	—
Conoco Inc.	6,860(H)	40	—	—	—	—	—	—	—	1	2
Consumers Gasoline Stations	29	3	—	—	—	—	—	—	—	—	—
Consumers Oil	35	2	—	—	—	—	—	—	—	28	7
Crystal Flash Petroleum	20	1	—	—	—	—	—	—	—	—	—
C.S.C. Oil Co.	22	2	—	—	—	—	—	—	—	—	—
K.E. David, Ltd.	13	1	—	—	—	—	—	—	—	—	13
DeBlois Oil Co.	40(I)	2	—	—	—	11	29	—	—	—	—
Derby Refining Co.	784	23	—	1	—	1	—	—	—	3	—
Diamond Shamrock Refining & Marketing Co.	2016	12	—	—	—	—	—	—	—	—	—
Drakes Refinery Stations	13	1	—	—	—	—	—	—	—	—	—
East Coast Oil Corp.	35	1	—	—	—	—	—	—	—	—	—
Emro Marketing Co.	1334	18	—	—	—	—	—	—	—	—	—
Englefield Oil Co.	245	2	—	—	—	—	—	—	—	—	—
Exxon Co., U.S.A.	14,468	37	215	90	—	205	23	116	330	610	894
Fortmeyer, Inc.	2	1	—	—	—	—	—	—	—	—	—
Foster Oil Co.	22	1	—	—	—	—	—	—	—	—	—
H.N. Funkhouser & Co.	24	3	—	—	—	—	—	—	—	—	—
Getty Petroleum Corp.	2,191(M)	11	145	107	63	234	35	126	819	332	244
Global Petroleum Corp.	90(N)	2	—	—	—	20	—	—	—	—	—
Godwin Oil Co.	19	1	—	—	—	—	—	—	—	—	—
Gresham Petroleum Co.	25	1	—	—	—	—	—	—	—	—	—
Gulf Oil	4,180	11	276	115	151	495	31	276	683	762	1,015
Highway Oil, Inc.	212(O)	22	—	2	2	—	—	—	23	—	19
Angus I. Hines, Inc.	64(P)	3	—	—	—	—	—	—	—	—	
Hop-In Food Stores	5	2	—	—	—	—	—	—	—	—	—
Hull Oil Co.	35	2	—	—	—	—	—	—	—	—	—
J. & L. Oil, Inc.	59	3	—	—	—	—	—	—	—	—	—
Joe Bob's Food Stores, Inc.	57	1	—	—	—	—	—	—	—	—	—
Kellam Energy, Inc.	163(R)	3	—	—	—	—	—	—	—	—	—
Kellett Oil Co.	33	5	—	—	—	—	—	—	—	—	—
Kelley Williamson Co.	45	2	—	—	—	—	—	—	—	—	—
Kerr-McGee Refining Corp.	1,960	22	—	—	—	—	—	—	—	—	—
Kickapoo Oil Co., Inc.	60	1	—	—	—	—	—	—	—	—	—
Kimber Petroleum Corp.	110	1	—	—	—	—	—	—	—	110	—
Kirschner Bros. Oil Co.	31	2	—	—	—	—	—	—	—	21	10
Lake Shore Petrocorp.	37	2	—	—	—	—	—	—	—	—	—
Lyden Oil Co.	165	1	—	—	—	—	—	—	—	—	—
Marathon Petroleum Co.	2,395	6	—	—	—	—	—	—	—	—	—
McDowell Oil Service Inc.	31	1	—	—	—	—	—	—	—	—	31
McLeiser Oil, Inc.	62	1	—	—	—	—	—	—	—	—	—

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†Includes District of Columbia

(A) Includes Fina Oil and Chemical Co., Finaserve, Inc.

(B) Includes Omega Oil

(C) Includes Canal Refining Co., Cove Petroleum Corp., Anchor Coal Co., Bay Petroleum Corp., Clear Creek Coal Co.

(D) Includes Prestige Stations, Inc.

in the United States

South Atlantic									East North Central					East South Central			
Del.	Md.	D.C.	Va.	W.Va.	N.C.	S.C.	Ga.	Fla.	Ohio	Ind.	Ill.	Mich.	Wis.	Ky.	Tenn.	Ala.	Miss.
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	15	—	91	149	475	426	—	—	4	—	—	7	199	174	39
21	267	42	432	—	951	358	662	706	395	506	1,047	644	511	—	709	467	291
—	—	—	10	99	—	—	—	14	222	18	22	23	67	191	—	—	—
4	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	1	—	34	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
—	—	—	—	—	—	—	—	—	—	—	—	—	—	28	—	—	—
—	—	—	—	—	—	—	—	—	83	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	1	2	—	—	—	—	—	—	—	17	—
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	180	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	1	40	—	—	—	—	—	—	—	—	59
—	280	19	568	322	126	111	867	813	237	16	—	—	—	843	81	856	448
18	93	3	356	40	245	89	275	627	96	65	162	95	224	24	174	271	109
—	—	—	—	3	—	—	—	—	198	116	250	192	101	22	—	—	—
—	—	—	—	—	—	—	—	—	150	—	—	—	—	—	—	—	—
—	—	—	—	—	6	25	32	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—
—	—	—	—	—	19	—	—	21	—	15	27	—	—	156	18	—	—
16	1	—	34	8	47	27	49	38	23	7	78	23	92	14	67	42	66
—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	24	1	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	20	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	12	—	—	—	—	10	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	40	3	7	2	3	94	—	—	31	—	—	11	4	—	—
—	—	—	13	—	—	—	—	—	—	—	—	—	—	1	5	—	—
—	—	—	—	—	—	—	—	—	—	—	—	13	—	—	—	—	—
—	—	—	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	12	31	81	70	65	405	153	145	165	67	57	10	9	22
—	—	—	—	28	—	—	—	—	217	—	—	—	—	—	—	—	—
60	422	49	775	461	1,349	711	516	511	11	—	—	—	—	—	718	362	198
—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	22	—	—	—	—	—
—	2	—	19	3	—	—	—	—	—	—	—	—	—	—	—	—	—
36	49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	19	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25
100	—	—	—	—	—	—	—	—	276	—	—	—	—	—	—	—	—
—	5	—	—	5	—	—	2	28	35	9	—	3	—	8	7	2	2
—	—	—	62	1	1	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	3	—	—
—	—	—	—	—	—	—	—	34	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	5	—	—	—	42	—	12	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	57	—
13	40	—	110	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	4	—	—	3	—	—	1
—	—	—	—	—	—	—	—	—	—	—	41	—	4	—	—	—	—
—	—	—	1	—	—	—	—	8	—	23	160	1	125	10	24	53	12
—	—	—	—	—	—	—	—	—	—	—	—	—	60	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	1	36	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	165	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	816	530	377	533	10	129	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	62	—	—	—	—	—

(E) Estimated
(F) Includes Citgo branded 7-Elevens
(G) Includes Interstate Stations, Inc.
(H) Includes Kayo Oil Co.

Branded Retail Outlets (cont'd)

Company	TOTAL BRANDED RETAIL OUTLETS	NUMBER OF STATES WHERE GASOLINE BRAND IS MARKETED	New England						Middle Atlantic		
			Maine	N.H.	Vt.	Mass.	R.I.	Conn.	N.Y.	N.J.	Pa.
M.G.S. Oil, Petroleum & General Trading Corp.	8	1	—	—	—	—	—	—	—	—	—
Mid-States Petroleum	108	3	—	—	—	—	—	—	—	—	—
Midwest Petroleum Co.	145(S)	2	—	—	—	—	—	—	—	—	—
Miller Oil Co.	68(T)	2	—	—	—	—	—	—	—	—	—
Mobil Oil Corp.	12,619	40	249	173	163	602	77	376	1,546	515	1,066
Murphy Oil USA, Inc.	569	14	—	—	—	—	—	—	—	—	—
Musket Corp.	136	8	—	—	—	—	—	—	—	—	—
National Oil & Gas Inc.	85	2	—	—	—	—	—	—	—	—	—
NOCO Energy Corp.	24	1	—	—	—	—	—	—	24	—	—
Parker Oil Co. Inc.	190	3	—	—	—	—	—	—	—	—	—
Patterson Oil Co., Inc.	35	1	—	—	—	—	—	35	—	—	—
PDQ Food Stores, Inc.	86(U)	6	—	—	—	—	—	—	—	—	—
Pennzoil Products Co.	597	7	—	—	—	—	—	—	14	—	151
Pester Marketing Co.	220	11	—	—	—	—	—	—	—	—	—
Phillips 66 Co.	10,669	37	—	—	—	—	—	—	—	—	2
Pilot Oil Corp.	107	17	—	—	—	—	—	—	—	1	1
Pride Oil Co., Inc. (Miss.)	21	2	—	—	—	—	—	—	—	—	—
Pride Oil Co., Inc. (Tenn.)	12	1	—	—	—	—	—	—	—	—	—
Quaker State Oil Refining Corp.	196	4	—	—	—	—	—	—	38	—	60
Racetrac Petroleum, Inc.	309	13	—	—	—	—	—	—	—	—	—
RECO Petroleum, Inc.	112	4	—	—	—	—	—	—	—	—	74
Reinauer Petroleum Co.	14	1	—	—	—	—	—	—	—	14	—
Remote Services, Inc.	265	9	—	4	—	—	—	—	12	—	—
River Oil Co.	47	2	—	—	—	—	—	—	—	—	—
Russell Petroleum Corp.	55	1	—	—	—	—	—	—	—	—	—
Shelby Petroleum Corp.	20	2	—	—	—	—	—	—	—	—	—
Shell Oil Co.	11,133	41	—	14	—	238	59	156	198	277	78
Shotmeyer Bros. Petroleum Corp.	72	1	—	—	—	—	—	—	—	72	—
Sinclair Oil Corp.	2,479	24	—	—	—	—	—	—	—	—	—
R.L. Smeltz Oil Co., Inc.	20	1	—	—	—	—	—	—	—	—	20
SOS Oil Corp.	62	1	—	—	—	—	—	—	62	—	—
Southern Oil Co., Inc.	13	1	—	—	—	—	—	—	—	—	—
The Spencer Companies, Inc.	58	1	—	—	—	—	—	—	—	—	—
Standard Oil Co. (Ohio)	7,623(W)	29	14	55	52	97	—	36	—	136	348
Stevens Oil Co.	48	1	—	—	—	—	—	—	—	—	—
Sugarcreek Corp.	200	3	—	—	—	—	—	—	185	10	5
Sumrall Oil Services, Inc.	78	1	—	—	—	—	—	—	—	—	—
Sun Refining & Marketing Co.	5,662(Y)	29	24	33	7	309	64	141	557	445	732
Sunshine Jr. Stores, Inc.	25	2	—	—	—	—	—	—	—	—	—
Tartan Oil Corp.	55	1	—	—	—	—	—	—	55	—	—
Taylor Oil Co.	56	2	—	—	—	—	—	—	—	—	—
Texaco Inc.	18,939	46	193	132	110	503	96	379	555	476	611
Texas City Refining, Inc.	21(Z)	3	—	—	—	—	—	—	—	—	—
Thornhill Oil Co., Inc.	29	1	—	—	—	—	—	—	—	—	—
Torco Oil Co.	39	1	—	—	—	—	—	—	—	—	—
Total Petroleum, Inc.	1,915	19	—	—	—	—	—	—	—	—	—
Transit Oil Co.	25	2	—	—	—	—	—	—	—	—	—
Trenton Oil Co., Inc.	44	1	—	—	—	—	—	—	—	44	—
Triton Inc.	44	4	—	—	—	—	—	—	—	—	—
Ultra Power Corp.	5	1	—	—	—	—	—	—	5	—	—
United Refining Co.	285	3	—	—	—	—	—	—	135	—	133
Unocal Corp.	10,633	41	—	—	—	—	—	2	2	2	20
Vista Marketing Group Ltd.	16	4	—	—	—	—	—	—	—	—	—
Waco Oil Co., Inc.	16	2	—	—	—	—	—	—	—	—	—
Wake Up Oil Co., Inc	40	1	—	—	—	—	—	—	—	—	—
Warelubco, Inc.	93	6	—	—	—	—	—	—	—	—	—
Warren Equities, Inc.	269(AA)	8	8	8	—	61	54	53	35	34	16
Willard Oil Co., Inc.	27(CC)	1	—	—	—	—	—	—	—	—	—
A.T. Williams Oil Co.	77	2	—	—	—	—	—	—	—	—	—
J.H. Williams Oil Co., Inc.	83(DD)	1	—	—	—	—	—	—	—	—	—
The Wills Group, Inc.	90(EE)	3	—	—	—	—	—	—	—	—	—
[illegible] Oil Co., Inc.	11(FF)	1	—	—	—	—	—	—	—	—	—

(I) Includes Beacon Oil Co.
(J) NPN projections based on percentages provided in survey
(K) Includes Anchor Refining Inc., Desert Petroleum, Inc.
(L) Includes Marlen Gas Co.
(M) Includes Aero Oil Co., Kingston Oil Supply Co.
(N) Includes Carl King Inc., an affiliate.

South Atlantic									East North Central					East South Central			
Del.	Md.	D.C.	Va.	W.Va.	N.C.	S.C.	Ga.	Fla.	Ohio	Ind.	Ill.	Mich.	Wis.	Ky.	Tenn.	Ala.	Miss.
—	—	—	—	—	—	—	—	—	8	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	3	23	—	82	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	30	—	—	—	—	—	—
—	—	—	62	—	6	—	—	—	—	—	—	—	—	—	—	—	—
64	149	—	153	64	170	27	34	400	331	190	512	578	553	52	140	25	1
—	—	—	20	—	31	9	52	99	—	—	—	4	94	3	64	74	17
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—
—	—	—	—	—	—	—	—	—	5	60	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	1	—	185	—	4	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	15	—	—	—	—
—	—	—	—	116	—	—	—	—	284	12	—	8	—	12	—	—	—
—	—	—	—	—	—	—	—	—	—	—	11	—	—	4	2	—	—
—	76	—	307	66	727	345	401	545	45	372	609	77	275	177	340	389	200
—	—	—	17	1	8	1	7	9	3	2	—	—	—	10	40	2	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	19
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12	—	—
—	—	—	—	35	—	—	—	—	63	—	—	—	—	—	—	—	—
—	1	—	14	—	5	10	39	26	—	—	—	—	—	—	13	163	6
—	4	—	17	17	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	12	—	—	21	—	15	27	—	—	156	17	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45	—	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	55	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	10	10	—	—
40	243	10	372	19	470	229	451	582	459	340	656	682	156	317	302	447	291
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	7	—	30	—	28	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	58	—
13	26	—	224	51	710	468	842	555	1,377	2	1	267	—	551	726	572	488
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	78
47	113	19	42	46	93	9	—	—	505	223	385	423	—	118	37	—	—
—	—	—	—	—	—	—	—	13	—	—	—	—	—	—	—	—	12
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	10	—	46	—	—	—	—	—	—	—	—	—	—	—	—
71	270	11	628	62	960	473	649	789	—	—	30	—	4	96	565	740	454
—	—	—	—	—	—	—	1	9	—	—	—	—	—	—	—	11	—
—	—	—	—	—	—	—	—	—	—	29	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	39	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	5	11	557	47	1	19	—	—
—	—	—	—	—	—	—	—	—	—	5	—	—	—	20	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	13	—	9	7	15	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—
—	8	—	330	173	705	265	560	666	557	484	539	714	461	213	401	709	393
—	—	—	—	—	—	—	—	—	—	—	4	—	6	—	—	—	—
—	—	—	—	—	—	—	—	—	5	—	—	—	—	11	—	—	—
—	—	—	—	—	—	—	—	—	—	40	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	8	—	3	68	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	27	—	—	—	—	—	—	—	—	—	—	—
—	—	—	35	—	42	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	83	—	—	—	—	—	—	—	—	—
1	87	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	11	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(O) Includes Hi-Lo Oil Co., Inc., Workingman's Friend Oil, Inc., Fairway Oil Inc., affiliates.
(P) Includes Franklin Oil Co., Sentry Petroleum, Inc., Service Gas Co.
(Q) Includes Sav-O-Mat Inc.
(R) Includes Shore Stop.
(S) Includes Bolch Oil Co.
(T) Includes Miller Co. South.

Branded Retail Outlets (cont'd.)

Company	TOTAL BRANDED RETAIL OUTLETS	NUMBER OF STATES WHERE GASOLINE BRAND IS MARKETED	West North Central						
			Minn.	Iowa	Mo.	N.D.	S.D.	Neb.	Kan.
Adams Resources & Energy, Inc.	128	1	—	—	—	—	—	—	—
American Petrofina, Inc.	4,209	24	47	40	183	11	28	71	157
Amoco Corp.	12,337	30	565	441	486	288	214	127	223
Anchor Gasoline Corp.	108(C)	1	—	—	—	—	—	—	—
Ashland Oil, Inc.	715	16	92	9	4	1	5	—	—
Atlantic Richfield Co.	1,719(D)	6	—	—	—	—	—	—	—
Bradley Petroleum Inc.	33(Q)	3	—	—	—	—	—	—	—
Brennan Petroleum Co.	2	1	—	—	—	—	—	—	—
California Target Enterprises, Inc.	150	1	—	—	—	—	—	—	—
Cardon Corp.	39	4	—	—	—	—	—	—	—
Cenex	1,188	13	319	30	—	258	157	45	5
Charter Marketing Co.	404	9	—	—	—	—	—	—	—
Chevron Corp.	13,879	33	—	—	2	—	—	—	—
Citgo Petroleum Corp.	7,296(F)	39	55	35	136	—	—	—	29
Clark Oil & Refining Corp.	985	12	23	8	56	—	—	—	11
Como Oil Co.	15	2	11	—	—	—	—	—	—
Conna Corp.	265	9	—	1	—	—	—	—	—
Conoco Inc.	6,860(H)	40	196	282	453	124	92	264	301
Curtis Parker Oil Co. Inc.	27	1	—	—	—	—	—	—	—
Derby Refining Co.	784	23	9	102	125	—	7	55	170
Desert Counties Oil	15	1	—	—	—	—	—	—	—
Diamond Shamrock Refining & Marketing Co.	2,016	12	—	—	6	—	—	18	36
Dickey Inc.	8	1	—	8	—	—	—	—	—
DWF, Inc.	11	3	—	—	—	—	—	—	—
Emro Marketing Co.	1,334	18	—	—	—	—	—	—	—
Exxon Co., U.S.A.	14,468	37	—	—	—	—	2	—	—
Fas-Stop, Inc.	5	1	—	—	—	—	—	—	5
F.O. Fletcher Oil, Inc.	2	2	—	—	—	—	—	—	—
Flying J Inc.	63	10	—	—	—	8	—	—	—
Franko Oil Co.	50	2	—	—	—	—	—	—	—
Fuelman, Inc.	36	2	—	—	—	—	—	—	—
The Gas King Corp.	6	5	—	—	—	—	—	—	—
Gasco Gasoline, Inc.	62(K)	1	—	—	—	—	—	—	—
Geldbach Petroleum Co., Inc.	4(L)	1	—	—	4	—	—	—	—
General Oil Co.	32	1	—	—	—	—	—	—	—
Gull Industries Inc.	110	2	—	—	—	—	—	—	—
Harris Enterprises Inc.	26	2	—	—	—	—	—	—	—
Highway Oil, Inc.	212(O)	22	—	1	13	—	4	—	23
Kellett Oil Co.	33	5	—	—	24	—	—	—	—
Kent Oil, Inc.	19	1	—	—	—	—	—	—	—
Kerr-McGee Refining Corp.	1,960	22	49	144	133	9	38	120	159

(U) Includes Kwik-Way Stores, Inc.
(V) Includes Mission Trail Oil Co.
(W) Includes Boron Oil Co., BP Oil Co., Gulf Products Division
(X) Includes Steiner Oil Co.

West South Central				Mountain								Pacific				
Ark.	La.	Okla.	Texas	Mont.	Idaho	Wyo.	Colo.	N.M.	Ariz.	Utah	Nev.	Wash.	Ore.	Calif.	Alaska	Hawaii
—	—	—	128	—	—	—	—	—	—	—	—	—	—	—	—	—
182	154	234	1,378	—	—	—	2	141	2	—	—	—	—	—	—	—
—	—	—	—	—	66	95	218	—	—	—	—	—	—	—	—	—
—	108	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	57	—	68	245	170	1,165	—	14
—	—	—	—	—	—	1	27	5	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	150	—	—
—	—	3	—	—	—	—	—	—	33	—	—	—	—	2	—	—
—	—	—	—	38	28	10	—	—	—	16	—	62	40	—	—	—
—	88	—	90	—	—	—	—	—	—	—	—	—	—	—	—	—
567	700	331	2,703	72	136	38	97	280	198	135	96	465	309	1,956	122	153
142	339	204	326	—	—	—	197	41	1	132	—	—	—	1	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
292	659	652	1,026	431	83	145	563	221	20	190	12	152	—	67	—	—
—	27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	37	42	—	—	3	33	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	15	—	—
53	31	113	1,517	—	—	—	125	98	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	9	1	—	—	—	—	—	—	—	—	—	—	—	—	—
4	21	1	16	—	—	—	—	—	—	—	—	—	—	—	—	—
454	646	2	2,636	202	44	17	64	166	311	27	52	257	137	825	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—
—	—	—	—	4	3	1	—	1	—	13	1	16	4	12	—	—
—	—	—	—	—	—	—	—	—	—	—	—	9	41	—	—	—
—	32	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	1	1	—	—	—	2	—	—	1	1	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	62	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	90	20	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	2	24	—	—	—
—	—	—	12	—	—	4	3	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	19	—	—	—	—	—	—	—	—	—	—	—	—	—
245	2	421	210	—	—	—	—	13	—	—	—	—	—	—	—	—

(Y) Includes Herr Gas & Oil Co., Mid-State Oil Co., Montour Auto Service Co., Mascot Petroleum Co., Stop-N-Go Foods, Inc., King-Kwik Minit Markets, Inc.

(Z) Includes TCR, Inc.

(AA) Includes Drake Petroleum Co., Inc., Kenyon Oil Co., Mid-Valley Oil Co., Puritan Oil Co.

(BB) Eighteen outlets are unattended cardlock units.

Branded Retail Outlets (cont'd.)

Company	TOTAL BRANDED RETAIL OUTLETS	NUMBER OF STATES WHERE GASOLINE BRAND IS MARKETED	West North Central						
			Minn.	Iowa	Mo.	N.D.	S.D.	Neb.	Kan.
Kunz Oil Co.	37	1	37	—	—	—	—	—	—
Kwik Shop, Inc.	134	4	—	31	—	—	—	37	67
Mid-Missouri Oil Co.	15	1	—	—	15	—	—	—	—
Midwest Petroleum Co.	145(S)	2	—	—	115	—	—	—	—
Mobil Oil Corp.	12,619	40	374	120	277	31	2	—	4
Murphy Oil USA, Inc.	569	14	56	—	—	—	—	—	—
Musket Corp.	136	8	—	—	—	—	—	—	19
Neal, Inc.	36	1	—	—	—	—	—	—	—
Newell Oil Co., Inc.	16	1	—	—	—	—	—	—	—
Olympian Oil Co.	43	1	—	—	—	—	—	—	—
PDQ Food Stores, Inc.	86(U)	6	10	—	1	—	—	—	—
Pester Marketing Co.	220	11	9	98	24	—	5	18	15
Petrotex Marketing Inc.	22	1	—	—	—	—	—	—	—
Phillips 66 Co.	10,669	37	430	424	699	29	145	271	349
Pilot Oil Corp.	107	17	—	1	1	—	—	—	—
Pride of Texas Dist. Co.	24	1	—	—	—	—	—	—	—
Quortrup Petroleum Co.	3	1	—	—	—	—	—	—	—
Racetrac Petroleum, Inc.	309	13	—	—	1	—	—	—	—
Remote Services, Inc.	266	9	—	1	—	—	—	—	—
Robinson Oil Co., Inc.	24(V)	1	—	—	—	—	—	—	—
Sahara Oil Co., Inc.	25	1	—	—	—	—	—	—	—
Schaeffer Oil, Inc.	5	1	—	—	—	—	5	—	—
Shay Oil Co., Inc.	18	2	—	—	—	—	—	—	—
Shell Oil Co.	11,133	41	—	38	222	—	—	—	—
Sinclair Oil Corp.	2,479	24	166	210	369	139	167	168	63
Southern Counties Oil Co.	30	1	—	—	—	—	—	—	—
Standard Oil Co. (Ohio)	7,623(W)	29	—	—	1	—	—	—	—
Sun Refining & Marketing Co.	5,662(Y)	29	—	499	242	—	—	17	19
Texaco Inc.	18,939	46	211	219	378	—	88	163	258
Tooley Oil Co.	9	1	—	—	—	—	—	—	—
Total Petroleum, Inc.	1,915	19	65	110	344	12	40	101	360
Town Pump Inc. & Affiliates	60	1	—	—	—	—	—	—	—
Unocal Corp.	10,633	41	332	99	19	—	10	5	1
Vista Marketing Group Ltd.	16	4	—	1	5	—	—	—	—
Warelubco, Inc.	93	5	—	14	3	—	—	—	—
Webster Oil Co.	21	1	—	—	21	—	—	—	—
Western Marketing, Inc.	29	1	—	—	—	—	—	—	—
Wickland Oil Co.	85	3	—	—	—	—	—	—	—

(CC) Includes Meador Oil Co., Inc.
(DD) Includes Pioneer Oil Co., 75 Mini-Marts, Inc.
(EE) Includes SMO, Inc., Dash In Food Stores, Inc., Southern Maryland Oil, Inc., Delmarva Oil, Inc.
(FF) Includes Easy Go Stores.

West South Central				Mountain								Pacific				
Ark.	La.	Okla.	Texas	Mont.	Idaho	Wyo.	Colo.	N.M.	Ariz.	Utah	Nev.	Wash.	Ore.	Calif.	Alaska	Hawaii
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	330	—	944	—	—	—	—	—	240	—	7	346	334	1,394	1	—
6	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	1	76	21	—	—	—	8	3	—	—	—	—	—	—	—	—
—	—	—	35	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	16	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	43	—	—
—	—	—	—	—	—	5	50	—	—	—	5	—	—	—	—	—
—	—	—	—	—	—	2	32	—	—	—	—	—	—	—	—	—
—	—	—	22	—	—	—	—	—	—	—	—	—	—	—	—	—
288	346	575	1,398	2	113	60	285	156	8	161	3	—	8	—	—	—
1	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
—	—	—	24	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—
3	12	—	16	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	24	—	—
—	—	—	—	—	—	—	—	—	25	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	17	—	—	—	—	1	—	—
80	538	19	639	—	54	—	12	89	42	19	46	349	327	1,508	—	65
85	58	109	1	171	182	75	196	13	5	180	17	10	11	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	30	—	—
2	—	2	2	—	—	—	—	3	—	—	—	—	—	2	—	—
6	—	476	1	—	—	—	—	—	—	—	—	—	—	—	—	—
450	854	643	3,072	—	103	82	311	187	194	189	80	449	349	1,434	87	59
—	—	—	—	—	—	—	—	—	—	—	—	—	—	9	—	—
25	—	130	29	—	—	—	46	13	1	—	—	—	—	—	—	—
—	—	—	—	60	—	—	—	—	—	—	—	—	—	—	—	—
86	105	3	50	—	11	—	1	2	137	36	56	259	191	1,808	86	131
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	29	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	1	—	5	79	—	—

Average Number of Employees

(As of Jan. 1, 1986)

	Mining	Manufacturing		Transportation		Wholesale	Retail	
	Oil and Gas Extraction	Petroleum Refining	Oils and Greases	Pipelines, Except Gas	Gas Distribution	Petroleum Products	Gasoline Stations	Total
Alabama	1,840	358	49	93	3,136	4,844	7,622	17,942
Alaska	8,810	229	2	920	303	513	1,169	11,946
Arizona	126	NA	0	114	1,803	1,512	8,356	11,911
Arkansas	3,869	615	0	283	2,334	2,825	4,710	14,636
California	39,809	27,522	713	1,144	11,412	16,780	62,798	160,178
Colorado	24,193	573	47	101	2,318	2,929	8,601	38,762
Connecticut	160	NA	33	NA	1,299	2,052	9,384	12,978
Delaware	25	901	9	0	310	309	1,475	3,029
District of Columbia	70	96	0	0	666	185	1,054	2,071
Florida	1,051	79	173	62	2,222	7,140	30,156	40,883
Georgia	90	114	116	466	3,872	5,964	16,680	27,302
Hawaii	NA	417	0	0	333	522	3,638	4,910
Idaho	79	0	0	18	444	1,425	2,809	4,775
Illinois	6,858	6,514	821	945	8,373	10,091	26,269	59,871
Indiana	898	2,918	241	454	2,958	3,231	16,161	26,861
Iowa	75	0	58	167	1,404	3,150	11,435	16,289
Kansas	15,460	2,320	312	1,728	4,062	2,618	7,691	34,191
Kentucky	3,394	3,490	70	155	3,039	3,063	9,989	23,200
Louisiana	78,500	11,700	600	1,200	6,700	5,800	8,100	112,600
Maine	NA	NA	NA	NA	NA	1,318	2,627	3,945
Maryland	23	NA	NA	0	1,170	3,059	13,085	17,337
Massachusetts	125	62	376	NA	4,869	3,018	14,462	22,912
Michigan	4,200	1,600	500	250	7,600	5,380	21,250	40,780
Minnesota	NA	NA	NA	198	2,421	2,562	15,845	21,026
Mississippi	8,116	1,652	113	NA	2,164	2,789	5,389	20,223
Missouri	132	40	374	262	4,946	6,240	15,672	27,666
Montana	3,357	916	2	94	128	1,430	2,734	8,661
Nebraska	855	47	160	118	3,177	1,971	6,485	12,813
Nevada	468	61	0	19	661	427	3,515	5,151
New Hampshire	1	0	6	3	268	438	2,788	3,504
New Jersey	118	7,016	1,246	167	2,158	3,713	19,237	33,655
New Mexico	13,554	934	51	241	3,575	1,912	4,063	24,330
New York	2,582	8,696	411	123	6,954	9,516	28,703	56,985
North Carolina	14	198	NA	115	2,563	5,445	9,667	18,002
North Dakota	5,137	229	168	171	1,188	2,350	2,278	11,521
Ohio	10,823	5,931	720	674	7,502	5,881	29,159	60,690
Oklahoma	63,288	7,147	402	1,366	5,762	5,726	6,135	89,826
Oregon	158	0	NA	42	1,540	2,374	7,884	11,998
Pennsylvania	5,600	10,000	900	700	8,800	9,600	25,400	61,000
Rhode Island	9	NA	4	22	863	483	2,514	3,895
South Carolina	24	0	NA	NA	611	3,691	7,274	11,600
South Dakota	134	NA	NA	63	122	1,451	2,736	4,506
Tennessee	422	160	270	43	1,760	4,870	11,821	19,346
Texas	249,098	34,374	1,104	4,866	28,683	25,550	35,956	379,631
Utah	3,850	812	1	82	2,450	1,689	4,779	13,663
Vermont	0	0	0	0	124	309	1,750	2,183
Virginia	174	257	31	86	2,474	7,616	14,996	25,634
Washington	173	1,600	28	83	1,606	2,862	9,841	16,193
West Virginia	5,697	430	139	117	5,271	2,359	3,812	17,825
Wisconsin	14	NA	96	163	2,852	3,263	14,441	20,831
Wyoming	14,643	933	5	298	1,264	1,387	2,957	21,487
TOTAL	**578,096**	**140,941**	**10,403**	**18,216**	**172,514**	**205,632**	**587,352**	**1,713,154**

Note: Data differ from the Bureau of Labor Statistics national averages due to confidentiality rules.
Source: Independent Petroleum Assn. of America—"The Oil and Gas Producing Industry in Your State—1986-1987."

How Distillates Were Used in 1985

(Add 000 gal.)

Use (a)	1985	1984	% Change	% Share of Total Distillates Use in 1985	% Share of Total Distillates Use in 1984
Residential	7,212,897	6,910,211	4.4%	16.4%	15.8%
Commercial	4,514,211	4,904,727	(8.0)	10.3	11.2
Industrial	2,592,678	2,356,787	10.0	5.9	5.4
Oil Company	876,505	908,162	(3.5)	2.0	2.1
Farm	3,311,309	2,974,418	11.3	7.5	6.8
Elec. Utils.	514,327	689,012	(25.4)	1.2	1.2
Railroad	3,209,729	3,456,915	(7.2)	7.3	7.9
Vessel Bunkering	1,894,265	1,692,045	12.0	4.3	3.9
On-Highway Diesel	17,279,650	16,797,423	2.9	39.3	38.4
Military	788,179	696,309	9.9	1.8	1.6
Off-Highway Diesel	1,616,685	1,673,591	(3.4)	3.7	3.8
All other	176,299	671,514	(73.7)	0.4	1.5
U.S. Total	**43,966,734**	**43,731,114**	**(0.5)**	—	—

(a) In 1984, Energy Information Administration revised its sampling procedures and re-allocated some volumes in some categories; hence these data are not comparable in many respects to similar tables in earlier *Factbook* issues.
Source: Energy Information Administration, "Deliveries of Fuel Oil and Kerosine in 1984 and 1985," Petroleum Marketing Monthly, June 1986.

How Residual Was Used in 1985

(Add 000 gal.)

Use (a)	1985	1984	% Change	% Share of Total Residual Use in 1985	% Share of Total Residual Use in 1984
Commercial	1,326,870	1,418,630	(6.5%)	6.7%	6.7%
Industrial	4,011,361	3,963,753	(1.2)	18.8	18.8
Oil Company	776,019	1,162,547	(32.3)	5.5	5.5
Elec. Utils.	6,183,985	7,825,363	(21.0)	37.2	37.2
Railroad	6,163	1,796	(243.2)	—	—
Vessel Bunkering	5,473,562	5,687,130	(3.8)	27.0	27.0
Military	792,318	222,230	256.8	1.1	1.0
All other	460,402	768,908	(49.6)	3.7	3.7
U.S. Total	**18,431,280**	**21,050,358**	**(12.4)**	—	—

(a) In 1984, Energy Information Administration revised its sampling procedures and re-allocated some volumes in some categories; hence these data are not comparable in many respects to similar tables in earlier *Factbook* issues.
Source: Energy Information Administration, "Deliveries of Fuel Oil and Kerosine, 1984 and 1985, "Petroleum Marketing Monthly, June 1986.

How Kerosine Was Used in 1985

(Add 000 gal.)

Use (a)	1985	1984	% Change	% Share of Total Kerosine Use in 1985	% Share of Total Kerosine Use in 1984
Residential	862,573	516,393	67.0%	49.1%	29.1%
Commercial	367,218	799,748	(54.1)	21.0	45.1
Industrial	254,491	241,425	5.4	14.6	13.6
Farm	53,434	32,167	66.1	3.1	1.8
All other	208,139	182,037	14.3	11.9	10.3
U.S. Total	**1,745,856**	**1,771,700**	**(1.5)**	—	—

(a) In 1984, Energy Information Administration revised its sampling procedures and re-allocated some volumes in some categories; hence these data are not comparable in many respects to similar tables in earlier *Factbook* issues.
Source: Energy Information Administration, "Deliveries of Fuel Oil and Kerosine in 1984 and 1985," Petroleum Marketing Monthly, June 1986.

How New Homes Are Heated

For an industry segment that has been lagging badly in the new home construction market, fuel oil got an enormous improvement in 1986, preliminary data from the Commerce Department says. In New England, oil heat got 24% of the new homes, up 8% from the 1985 figure. For the nation as a whole, fuel oil got 5% in 1986 compared with 3% the preceding year.

Region	New Homes Completed (Add 000)	Share of New Homes by Fuels and Percentages			
		Gas	Electric	Oil	Other
Northeast	193	41%	31%	24%	4%
Midwest(a)	170	78	17	(*)	4
South	502	30	66	(*)	3
West	253	64	29	(*)	7
Total 1986	**1,118**	**47%**	**44%**	**5%**	**4%**
Total 1983	**1,072**	**44%**	**49%**	**3%**	**4%**

(a)Formerly called "North Central;" (*) Statistical data did not meet publication standards.
Source: U.S. Department of Commerce, 1986 Construction Reports, preliminary data published in March 1987.

Gas: Who Uses It for Heat

Natural gas added another 756,600 new customers in 1985. New home additions were up 5.3% in 1985, conversions 9.0%, and the net 5.7%, according to American Gas Assn.'s annual home-heating survey, which was published in the fall of 1986 for the data year of 1985.

Region	% of Gas-Heated Homes to Total Gas-Using Homes	Consumers Added in 1985 (Add 000)		
		New Homes	Existing Homes	Total Added
New England	67.6%	18.7	22.0	40.7
Mid-Atlantic	64.8	64.9	47.5	112.4
East North Central	94.4	91.5	31.2	122.7
West North Central	95.3	50.9	7.2	58.1
South Atlantic	90.1	62.5	21.3	83.8
East South Atlantic	97.6	18.6	5.5	24.1
West South Atlantic	93.4	34.7	3.0	37.7
Mountain	96.2	57.4	2.3	59.7
Pacific	97.4	208.0	9.4	217.4
Total	**88.8%**	**607.2**	**149.3**	**756.6**
% Change '85 vs. '84	—	5.3%	9.0%	5.7%

Source: American Gas Assn., Home Heating Survey, 1985.

Gas Heat Equipment Shipments

Manufacturer shipments of gas-fired furnaces rose a spanking 15.5% in 1986, Gas Appliance Manufacturers Assn. says.

Class and Type of Equipment	1986	1985	% Change
Central Heating:			
Furnaces	2,104,805	1,822,295	15.5%
Boilers	196,022	192,455	1.8
Space Heating:			
Wall Furnaces Vented	196,930	206,430	(4.6)
RV Systems	208,043	201,702	3.1
Water Heaters:			
Gas	3,728,779	3,528,931	5.7
Electric	3,389,150	3,452,283	1.8
Oil (a)	35,000	34,000	3.0

(a) Estimated by fuel oil industry sources for comparison.
Source: Gas Appliance Manufacturers Assn.

Distillate Deliveries in 1985 . . .

(Add 000 gal.)

	Residential		Commercial		Industrial	
Destination	1984	1985	1984	1985	1984	1985
PAD District 1						
New England States						
Connecticut	399,801	410,776	139,207	149,332	34,489	36,715
Maine	139,442	205,490	60,258	40,787	14,542	8,856
Massachusetts	755,594	756,390	234,209	240,087	27,522	30,429
New Hampshire	130,070	136,429	17,399	23,167	4,071	6,729
Rhode Island	124,455	143,918	24,837	18,579	8,337	7,087
Vermont	86,222	93,555	18,192	22,295	5,706	9,192
Central Atlantic States						
Delaware	58,731	56,022	13,008	14,056	9,381	8,252
District of Columbia	23,838	20,856	42,725	31,522	351	751
Maryland	260,866	211,450	119,981	81,763	45,936	38,934
New Jersey	690,128	760,742	308,315	237,342	60,639	63,179
New York	1,265,010	1,304,675	513,166	498,203	107,136	100,278
Pennsylvania	890,676	911,749	245,576	207,646	128,229	138,695
Lower Atlantic States						
Florida	21,249	23,894	93,147	153,930	62,068	36,490
Georgia	9,672	14,881	92,985	65,071	34,058	41,819
North Carolina	240,142	205,416	126,149	111,519	52,934	59,582
South Carolina	50,517	48,525	35,789	35,405	25,044	33,649
Virginia	232,137	216,319	117,903	103,562	53,743	54,511
West Virginia	21,232	19,465	22,894	25,398	55,413	49,949
Total	**5,399,783**	**5,540,552**	**2,225,741**	**2,059,663**	**729,599**	**725,096**
PAD District 2						
Illinois	87,290	95,036	213,906	167,325	59,158	65,621
Indiana	109,516	107,673	140,105	111,010	83,180	111,037
Iowa	45,932	60,396	55,396	47,323	13,091	10,890
Kansas	1,929	2,752	41,639	29,395	17,917	8,528
Kentucky	30,766	34,702	71,769	64,027	73,449	173,474
Michigan	223,900	251,065	112,756	99,311	64,878	62,748
Minnesota	141,842	161,073	124,024	115,367	28,891	33,651
Missouri	31,797	34,330	73,467	61,674	24,141	37,915
Nebraska	11,232	14,328	37,681	33,679	6,274	8,625
North Dakota	41,467	47,112	19,142	20,365	14,719	12,197
Ohio	141,260	188,345	161,950	85,696	104,963	107,503
Oklahoma	3,403	3,467	27,059	29,669	76,381	86,300
South Dakota	27,526	31,283	9,870	11,692	4,546	2,474
Tennessee	11,853	10,902	90,123	129,923	27,980	54,118
Wisconsin	224,608	270,388	170,309	133,536	19,312	16,245
Total	**1,134,319**	**1,312,854**	**1,349,197**	**1,139,995**	**618,881**	**791,328**
PAD District 3						
Alabama	1,859	1,425	39,313	54,318	61,424	41,731
Arkansas	36	30	62,455	49,331	18,358	11,983
Louisiana	118	335	87,148	157,560	60,026	74,891
Mississippi	187	86	36,912	44,911	56,931	39,819
New Mexico	698	876	20,047	19,023	51,451	89,176
Texas	14,185	1,634	368,799	403,367	240,824	411,355
Total	**17,083**	**4,385**	**614,674**	**728,510**	**489,014**	**668,955**
PAD District 4						
Colorado	5,847	4,471	35,020	28,659	26,527	13,115
Idaho	25,144	26,729	17,024	15,407	15,607	9,977
Montana	19,249	14,540	47,321	36,309	19,793	10,914
Utah	7,020	3,133	33,675	22,758	41,712	28,924
Wyoming	13,574	2,121	9,518	18,508	39,923	31,759
Total	**70,836**	**50,996**	**142,559**	**121,641**	**143,562**	**94,680**
PAD District 5						
Alaska	56,604	55,151	49,346	39,000	24,724	28,878
Arizona	26	505	10,217	20,042	47,980	38,067
California	6,026	6,234	324,757	147,907	149,166	131,205
Hawaii	31	13	4,677	5,711	2,179	2,745
Nevada	10,322	11,957	16,480	13,640	22,605	35,333
Oregon	87,492	99,946	85,259	58,249	72,837	34,983
Washington	127,690	130,306	61,821	179,853	5[illegible],241	41,400
Total	**288,192**	**304,112**	**572,556**	**464,402**	**375,732**	**312,612**
U.S. Total	**6,910,211**	**7,212,897**	**4,904,727**	**4,514,211**	**2,356,787**	**2,592,678**

. . . By End Use

(Add 000 gal.)

N.B.: In 1985, EIA began publishing two sets of product tables, one for sales, the other for deliveries. Both are based on the same raw data. The sales tables reflect the questionnaire totals; the deliveries tables are adjustments to correlate them with other industry data. EIA's original objective was to switch to the sales tables and drop the deliveries tables. However, because of statistical disparities, this switch-over has been delayed indefinitely. The data on these pages are the deliveries tables and are compatible with prior *NPN* Factbook summaries even though the latter were then labelled "sales."

	Oil Company		Farm		Electric Utility	
Destination	**1984**	**1985**	**1984**	**1985**	**1984**	**1985**
PAD District 1						
New England States						
Connecticut	979	871	2,549	828	897	2,870
Maine	152	28	4,762	3,701	14	199
Massachusetts	1,098	1,149	3,433	1,963	9,702	7,841
New Hampshire	31	5	1,985	1,425	132	904
Rhode Island	580	336	852	382	1,510	602
Vermont	93	60	3,132	5,833	1,005	574
Central Atlantic States						
Delaware	717	513	4,445	5,946	6,534	2,794
District of Columbia	248	148	—	32	33,121	12,975
Maryland	3,939	2,609	16,720	19,903	43,404	38,749
New Jersey	7,883	2,329	8,011	11,331	24,487	13,117
New York	3,899	3,942	33,759	50,391	5,604	7,496
Pennsylvania	8,007	13,301	36,332	42,889	48,231	20,599
Lower Atlantic States						
Florida	2,772	2,386	62,257	86,905	39,636	44,280
Georgia	734	354	60,658	67,026	15,506	1,612
North Carolina	552	432	46,645	51,073	19,131	17,452
South Carolina	1,114	655	20,471	20,984	7,012	10,061
Virginia	2,114	2,531	29,258	42,888	20,735	12,322
West Virginia	4,866	3,898	2,498	2,542	10,958	17,138
Total	**39,778**	**35,547**	**337,765**	**416,045**	**287,619**	**211,584**
PAD District 2						
Illinois	16,733	20,275	161,404	152,482	64,099	34,545
Indiana	4,782	2,313	80,975	66,394	13,464	12,656
Iowa	1,643	570	140,429	174,850	3,364	1,506
Kansas	11,218	13,046	103,623	119,451	6,232	3,155
Kentucky	13,497	1,436	38,787	41,563	9,134	7,297
Michigan	3,207	2,269	67,795	77,359	40,932	33,743
Minnesota	489	556	106,947	136,176	1,228	2,849
Missouri	2,375	402	83,271	97,693	7,014	4,074
Nebraska	159	110	135,552	151,861	3,236	210
North Dakota	3,298	4,412	82,935	94,763	3,834	1,937
Ohio	6,844	4,631	54,046	57,998	11,354	21,628
Oklahoma	74,458	73,800	49,143	73,602	770	14
South Dakota	15	5	56,308	64,394	656	551
Tennessee	2,159	3,436	40,198	46,064	91,556	8,795
Wisconsin	507	469	101,917	97,013	4,980	4,600
Total	**141,383**	**127,728**	**1,303,330**	**1,451,863**	**261,853**	**137,560**
PAD District 3						
Alabama	4,200	4,692	42,405	50,618	7,286	7,315
Arkansas	5,003	4,643	150,144	207,144	13,931	5,991
Louisiana	181,630	212,631	45,315	44,618	10,953	4,748
Mississippi	20,879	71,570	60,922	65,442	7,536	1,384
New Mexico	12,974	18,651	9,296	13,641	29	925
Texas	373,343	304,537	330,698	331,061	11,672	70,247
Total	**598,029**	**616,725**	**638,780**	**712,523**	**51,407**	**90,610**
PAD District 4						
Colorado	9,053	4,258	77,164	53,037	4,215	6,724
Idaho	137	126	59,327	50,952	48	17
Montana	13,272	1,906	55,239	101,096	392	1,225
Utah	5,672	1,635	8,296	7,263	7,052	2,145
Wyoming	26,528	36,486	11,933	18,332	1,999	6,428
Total	**54,664**	**44,410**	**211,960**	**230,680**	**13,706**	**16,539**
PAD District 5						
Alaska	4,378	3,616	971	889	19,114	12,695
Arizona	491	291	27,925	16,065	1,757	2,424
California	65,285	39,234	336,548	398,788	12,601	7,479
Hawaii	305	1,118	10,779	13,219	37,519	32,029
Nevada	614	604	10,083	9,289	1,828	2,604
Oregon	1,039	2,582	43,796	32,968	303	89
Washington	2,197	4,651	52,481	29,179	1,306	715
Total	**74,308**	**52,095**	**482,583**	**500,397**	**74,428**	**58,035**
U.S. Total	**908,162**	**876,505**	**2,974,418**	**3,311,309**	**689,012**	**514,327**

Distillate Deliveries 1985 . . .

(Add 000 gal.)

	Railroad		Vessel Bunkering		On-Highway	
Destination	**1984**	**1985**	**1984**	**1985**	**1984**	**1985**
PAD District 1						
New England States						
Connecticut	727	1,810	1,518	1,413	183,583	183,726
Maine	5,637	7,627	596	3,016	116,662	125,975
Massachusetts	45,640	47,853	16,448	21,463	252,545	245,057
New Hampshire	90	334	20	216	40,593	42,239
Rhode Island	2,375	491	3,726	1,405	32,809	11,775
Vermont	1,660	1,290	5	304	36,274	38,737
Central Atlantic States						
Delaware	5,251	340	488	552	46,602	50,528
District of Columbia	6,024	7,225	10	20	21,393	20,897
Maryland	32,715	34,984	16,896	20,880	208,168	238,103
New Jersey	23,911	49,327	52,652	67,722	436,162	445,512
New York	9,262	39,542	11,312	6,393	439,452	518,586
Pennsylvania	64,330	64,993	14,123	9,212	734,690	769,798
Lower Atlantic States						
Florida	101,670	63,740	100,598	77,445	664,162	706,762
Georgia	101,676	78,421	16,618	12,541	633,818	664,749
North Carolina	64,262	40,534	16,390	16,608	501,663	512,560
South Carolina	26,176	29,343	7,125	7,794	291,490	293,068
Virginia	151,111	119,239	25,825	32,548	408,060	437,519
West Virginia	32,877	22,096	131,611	125,442	123,877	121,288
Total	**675,394**	**609,188**	**415,962**	**404,982**	**5,172,003**	**5,428,879**
PAD District 2						
Illinois	207,727	162,894	76,791	55,190	574,188	586,969
Indiana	149,767	171,422	5,153	4,133	692,209	693,360
Iowa	49,725	38,330	2,196	1,090	313,635	298,367
Kansas	174,966	167,438	—	—	252,239	260,522
Kentucky	112,838	103,383	174,314	137,027	335,968	329,045
Michigan	43,247	42,816	1,191	5,748	425,302	454,673
Minnesota	45,316	37,323	7,339	9,075	284,668	289,062
Missouri	79,189	47,207	13,794	54,696	438,179	448,082
Nebraska	108,605	103,158	—	47	181,963	186,417
North Dakota	46,177	32,175	—	—	90,792	93,017
Ohio	170,614	105,203	6,136	772	810,535	831,466
Oklahoma	53,476	55,821	—	613	401,738	387,890
South Dakota	5,116	428	—	—	96,895	96,079
Tennessee	153,364	92,108	27,397	33,816	503,273	513,316
Wisconsin	21,173	46,636	8,717	8,429	342,908	349,753
Total	**1,421,299**	**1,206,344**	**321,437**	**310,636**	**5,744,012**	**5,817,027**
PAD District 3						
Alabama	76,888	72,325	31,354	37,425	345,705	357,980
Arkansas	26,535	24,068	1,920	11,003	285,945	288,154
Louisiana	82,373	108,706	395,300	413,715	362,139	325,752
Mississippi	22,765	22,073	53,278	49,102	268,572	280,338
New Mexico	6,873	3,975	—	—	168,017	177,728
Texas	412,498	377,311	152,210	187,321	1,514,092	1,550,477
Total	**627,932**	**608,479**	**634,063**	**698,566**	**2,944,470**	**2,980,429**
PAD District 4						
Colorado	71,959	64,684	—	981	202,150	199,169
Idaho	20,242	20,790	—	80	93,509	97,057
Montana	75,676	72,232	—	—	113,853	106,862
Utah	36,267	36,723	—	—	130,617	132,393
Wyoming	43,447	64,417	—	—	104,249	115,572
Total	**247,591**	**258,846**	**—**	**1,061**	**644,378**	**651,053**
PAD District 5						
Alaska	4,128	5,164	49,853	118,258	98,646	106,978
Arizona	68,087	52,700	—	—	228,929	267,552
California	197,605	255,583	185,498	240,241	1,399,258	1,387,378
Hawaii	394	303	23,064	31,938	17,548	18,589
Nevada	51,776	40,386	—	—	77,184	92,782
Oregon	118,630	111,410	18,001	25,598	195,543	243,977
Washington	44,078	61,367	44,177	62,985	275,452	287,006
Total	**484,699**	**526,892**	**320,594**	**479,020**	**2,292,560**	**2,404,282**
U.S. Total	**3,456,915**	**3,209,720**	**1,892,045**	**1,894,285**	**16,797,423**	**17,279,650**

. . . By End Use (Continued)

(Add 000 gal.)

Destination	Military		Off-Highway		All Other		Total	
	1984	1985	1984	1985	1984	1985	1984	1985
PAD District 1								
New England States								
Connecticut	185	298	5,442	6,632	9,471	89	778,847	795,359
Maine	266	72	5,732	5,960	2,174	639	350,238	402,350
Massachusetts	1,658	2,855	13,854	9,511	11,397	882	1,373,101	1,365,479
New Hampshire	72	894	4,775	7,380	768	606	200,006	220,326
Rhode Island	610	32	4,049	2,535	1,851	43	205,991	187,185
Vermont	35	48	3,180	3,461	287	311	155,792	175,660
Central Atlantic States								
Delaware	644	598	3,324	2,164	229	942	149,356	142,707
District of Columbia	94	8,983	435	558	49	36	128,288	104,011
Maryland	3,008	16,499	23,629	38,637	10,301	7,127	785,563	749,637
New Jersey	1,967	4,487	20,714	25,412	58,713	4,641	1,693,580	1,685,142
New York	2,207	5,919	44,514	43,487	20,765	4,626	2,456,086	2,583,539
Pennsylvania	4,019	1,621	67,066	45,147	28,749	2,515	2,270,029	2,228,166
Lower Atlantic States								
Florida	11,221	8,080	50,191	69,020	17,851	496	1,226,821	1,273,428
Georgia	2,489	3,352	29,836	41,087	4,296	3,483	1,002,347	994,396
North Carolina	3,813	3,546	21,231	24,302	5,585	818	1,098,497	1,043,842
South Carolina	2,425	484	13,990	15,312	2,708	914	483,860	496,195
Virginia	5,422	11,770	36,175	26,835	7,335	1,009	1,089,818	1,061,052
West Virginia	2,003	3	28,228	20,517	1,359	2,966	437,817	410,702
Total	**42,140**	**69,541**	**376,367**	**387,956**	**183,888**	**32,143**	**15,886,038**	**15,919,176**
PAD District 2								
Illinois	49,646	989	57,274	27,655	6,171	2,259	1,574,386	1,371,241
Indiana	1,786	1,008	21,140	8,876	5,074	917	1,307,152	1,290,807
Iowa	53	774	13,427	15,152	4,282	107	643,171	649,354
Kansas	547	283	13,639	20,397	8,887	3,092	632,837	628,059
Kentucky	2,156	137	60,273	19,483	3,592	731	926,544	912,307
Michigan	4,224	10,178	26,172	33,974	5,724	2,381	1,019,827	1,076,266
Minnesota	686	556	17,616	26,285	2,908	5,462	761,953	817,435
Missouri	2,120	2,180	22,600	30,113	873	1,989	778,821	820,356
Nebraska	723	428	13,540	20,026	5,328	67	504,312	518,957
North Dakota	2,201	3,016	6,356	5,793	109	1	311,029	314,788
Ohio	575	239	36,486	80,807	3,551	30,604	1,507,314	1,514,893
Oklahoma	574	310	51,427	48,099	14,671	10,744	753,100	770,327
South Dakota	361	218	4,074	3,428	416	—	204,782	209,553
Tennessee	4,854	1,526	27,822	38,501	23,019	4,466	1,003,598	936,972
Wisconsin	1,521	2,909	18,333	14,810	4,741	886	918,428	945,672
Total	**72,027**	**24,750**	**390,178**	**393,399**	**89,347**	**63,707**	**12,847,254**	**12,776,988**
PAD District 3								
Alabama	3,311	3,528	58,889	45,515	9,565	12,001	682,201	688,871
Arkansas	1,150	279	27,794	30,214	4,391	339	597,662	633,199
Louisiana	686	1,303	80,101	61,288	15,007	8,174	1,320,796	1,413,720
Mississippi	424	43,866	58,427	49,583	6,101	580	592,935	668,753
New Mexico	619	572	22,615	32,383	5,720	589	296,339	357,541
Texas	265,497	259,017	233,404	97,525	147,152	5,908	4,064,372	3,999,851
Total	**271,688**	**308,655**	**481,230**	**316,507**	**187,936**	**27,592**	**7,556,304**	**7,761,936**
PAD District 4								
Colorado	2,332	2,854	37,327	26,065	4,834	68	476,428	404,066
Idaho	1,420	1,224	10,191	8,268	5,058	4,400	247,709	235,028
Montana	931	801	13,829	129,801	33,816	350	393,372	476,035
Utah	1,023	6,332	17,630	8,415	4,894	235	293,857	249,955
Wyoming	477	475	46,263	25,230	9,572	3,948	307,485	323,274
Total	**6,183**	**11,686**	**125,240**	**197,779**	**58,174**	**9,000**	**1,718,850**	**1,688,358**
PAD District 5								
Alaska	7,815	15,457	8,786	32,836	4,898	7,938	329,265	426,841
Arizona	835	937	28,642	23,053	264	405	415,152	422,040
California	267,562	229,104	151,731	173,877	108,058	26,627	3,204,094	3,043,656
Hawaii	17,219	86,114	2,440	2,527	21	202	116,176	194,508
Nevada	3,414	1,901	38,103	18,174	1,142	1,426	233,553	228,097
Oregon	1,846	1,577	25,786	33,971	10,057	2,653	660,588	648,002
Washington	5,580	18,457	45,089	36,607	27,728	4,604	763,840	857,131
Total	**304,271**	**353,547**	**300,577**	**321,045**	**152,168**	**43,856**	**5,722,658**	**5,820,276**
U.S. Total	**696,309**	**768,179**	**1,673,591**	**1,616,685**	**671,514**	**176,299**	**43,731,114**	**43,968,734**

Source: Energy Information Administration, Petroleum Marketing Monthly, July 1986.

Deliveries of Kerosine in 1985 . . .

(Add 000 gal.)

	Residential		Commercial		Industrial	
Destination	**1984**	**1985**	**1984**	**1985**	**1984**	**1985**
PAD District 1						
New England States						
Connecticut	8,035	11,509	1,286	1,216	451	520
Maine	11,446	17,316	1,816	1,878	65	253
Massachusetts	8,807	10,987	753	2,052	326	815
New Hampshire	6,736	16,267	161	783	44	29
Rhode Island	1,526	2,489	146	76	1	2
Vermont	5,605	9,794	186	687	33	87
Central Atlantic States						
Delaware	7,317	12,352	257	979	263	23
District of Columbia	2	193	80	1,045	24	28
Maryland	15,268	21,196	853	1,703	292	176
New Jersey	18,926	17,264	1,149	1,473	438	1,083
New York	45,781	61,275	18,355	16,416	1,023	1,232
Pennsylvania	45,238	54,312	6,[illegible]98	6,832	1,738	4,170
Lower Atlantic States						
Florida	10,335	16,443	9,426	19,925	606	484
Georgia	2,552	4,897	615	868	234	495
North Carolina	54,250	76,025	1,739	4,661	2,879	4,553
South Carolina	15.373	23,054	520	917	1,562	3,272
Virginia	4[illegible],472	68,740	1,300	4,068	657	1,221
West Virginia	5,156	7,432	909	2,449	917	2,337
Total	**303,824**	**431,546**	**45,849**	**68,026**	**11,552**	**20,780**

[redacted]

	Residential		Commercial		Industrial	
Destination	**1984**	**1985**	**1984**	**1985**	**1984**	**1985**
PAD District 3						
Alabama	32,060	28,584	5,461	6,183	9,992	2,154
Arkansas	32,624	12,167	79,196	33,074	6,348	8,456
Louisiana	6,192	6,993	8,373	25,707	24,283	24,249
Mississippi	7,579	10,512	4,823	15,308	7,808	5,515
New Mexico	18,886	16,069	58,065	23,981	16,946	24,487
Texas	19,213	44,277	421,394	98,620	55,255	58,376
Total	**116,553**	**118,602**	**577,312**	**202,872**	**120,633**	**123,237**

[redacted]

	Residential		Commercial		Industrial	
Destination	**1984**	**1985**	**1984**	**1985**	**1984**	**1985**
PAD District 5						
Alaska	145	47	265	113	60	26
Arizona	97	140	105	92	56	475
California	4,396	3,214	11,182	15,594	10,152	19,487
Hawaii	—	—	63	58	—	—
Nevada	1,162	2,097	184	204	48	32
Oregon	1,084	1,802	1,394	1,146	22	30
Washington	3,121	3,800	10,851	9,101	34,608	40,448
Total	**10,455**	**11,099**	**24,043**	**26,308**	**44,947**	**60,498**
U.S. Total	**651,953**	**862,573**	**691,066**	**367,218**	**221,449**	**254,491**

. . . By End Use

(Add 000 gal.)

N.B.: In 1985, EIA began publishing two sets of product tables, one for sales, the other for deliveries. Both are based on the same raw data. The sales tables reflect the questionnaire totals; the deliveries tables are adjustments to correlate them with other industry data. EIA's original objective was to switch to the sales tables and drop the deliveries tables. However, because of statistical disparities, this switch-over has been delayed indefinitely. The data on these pages are the deliveries tables and are compatible with prior *NPN* Factbook summaries even though the latter were then labelled "sales."

	Farm		All Other		Total	
Destination	**1984**	**1985**	**1984**	**1985**	**1984**	**1985**
PAD District 1						
New England States						
Connecticut	14	63	135	253	9,921	13,560
Maine	106	121	301	267	13,734	19,834
Massachusetts	247	5	259	175	10,392	14,034
New Hampshire	19	22	7	68	6,967	17,170
Rhode Island	0	1	5	7	1,677	2,574
Vermont	43	137	441	277	6,307	10,983
Central Atlantic States						
Delaware	7	44	162	16	8,006	13,413
District of Columbia	—	—	86	27	191	1,293
Maryland	99	102	674	555	17,186	23,731
New Jersey	45	33	19,256	6,876	39,814	26,729
New York	770	952	8,668	21,384	74,597	101,260
Pennsylvania	1,139	906	2,339	1,495	56,752	67,715
Lower Atlantic States						
Florida	73	107	686	11,203	21,127	48,163
Georgia	36	345	173	390	3,610	6,995
North Carolina	4,458	4,506	267	1,162	63,594	90,907
South Carolina	100	96	389	918	17,944	28,257
Virginia	879	2,261	690	457	44,998	76,747
West Virginia	326	334	377	701	7,685	13,253
Total	**8,360**	**10,034**	**34,916**	**46,232**	**404,502**	**576,618**
[redacted]						
PAD District 3						
Alabama	1,310	490	1,105	4,968	49,928	42,379
Arkansas	2,516	2,153	1,009	5,635	121,692	61,485
Louisiana	2,349	798	12,142	15,912	53,339	73,659
Mississippi	383	1,187	1,860	1,326	22,453	33,849
New Mexico	1,090	3,240	8,883	7,281	103,870	75,057
Texas	6,738	10,933	73,645	93,565	576,245	305,772
Total	**14,386**	**18,801**	**98,644**	**128,687**	**927,528**	**592,200**
[redacted]						
PAD District 5						
Alaska	0	0	212	137	682	322
Arizona	10	8	7	9	275	724
California	3,190	1,980	9,118	230	38,038	40,505
Hawaii	—	—	10	10	73	68
Nevada	74	5	266	5	2,183	2,342
Oregon	41	25	1	4	2,544	3,006
Washington	53	113	15	119	48,647	53,581
Total	**3,369**	**2,132**	**9,629**	**512**	**92,442**	**100,548**
U.S. Total	**44,268**	**53,434**	**163,034**	**208,139**	**1,771,770**	**1,745,856**

Source: Energy Information Administration, Petroleum Marketing Monthly, July 1986.

Residual Fuel Oil Deliveries in 1985 . . .

(Add 000 gal.)

	Commercial		Industrial		Oil Company		Electric Utility	
Destination	**1984**	**1985**	**1984**	**1985**	**1984**	**1985**	**1984**	**1985**
PAD District 1								
New England States								
Connecticut	59,417	51,059	69,898	65,893	—	887	1,214,751	858,843
Maine	30,517	31,608	172,755	103,419	212	175	13,507	18,793
Massachusetts	100,337	95,972	215,712	254,382	—	—	616,919	861,009
New Hampshire	12,732	2,636	11,591	31,124	24,305	—	15,120	—
Rhode Island	12,339	16,772	19,401	29,586	—	—	8,505	4,959
Vermont	1,958	718	4,466	2,849	6,644	—	—	—
Central Atlantic States								
Delaware	7,603	2,142	26,683	19,547	40	—	74,640	25,065
District of Columbia	20,200	8,701	80	24	—	—	—	—
Maryland	23,054	7,665	118,895	27,096	1,296	3,540	234,500	169,228
New Jersey	109,476	95,090	102,859	133,733	52,724	13,635	1,220,777	894,173
New York	511,702	507,016	166,158	166,012	757	1,661	2,035,727	1,411,672
Pennsylvania	62,882	42,980	114,422	55,117	45,013	24,348	538,286	342,773
Lower Atlantic States								
Florida	41,150	65,982	178,775	190,317	557	156	984,871	825,493
Georgia	21,323	14,231	119,131	314,941	345	395	2,034	757
North Carolina	6,943	9,787	227,237	175,570	2,505	—	—	—
South Carolina	3,094	2,421	119,718	67,721	26	86	—	—
Virginia	19,906	13,475	105,290	97,974	1,052	1,076	149,491	74,002
West Virginia	21	153	40,381	22,704	4,701	6,620	—	—
Total	**1,044,653**	**968,408**	**1,813,450**	**1,758,007**	**140,175**	**52,577**	**7,109,129**	**5,486,768**
PAD District 2								
Illinois	40,921	18,033	43,315	51,481	215,646	127,735	4,339	1,025
Indiana	41,965	20,446	69,882	37,062	866	137,160	—	25
Iowa	152	54	7,181	7,471	—	—	2	—
Kansas	197	—	61,458	2,560	1,085	826	—	528
Kentucky	1,742	40	23,575	16,895	19,697	15,783	—	—
Michigan	2,460	-14,444	109,551	101,644	21,324	14,840	—	2,228
Minnesota	5,512	11,747	30,307	15,267	20,479	10,036	2	8,073
Missouri	9,181	6,350	10,742	29,187	—	—	—	1,262
Nebraska	—	—	4,058	1,697	2	—	—	—
North Dakota	5,428	3,387	31,466	11,353	21,489	11,513	323	116
Ohio	1,123	4,388	112,000	81,504	39,363	17,470	609	228
Oklahoma	—	—	19,370	10,668	737	410	—	—
South Dakota	2,489	987	2,507	849	—	—	—	—
Tennessee	4,873	5,138	35,774	23,232	—	—	—	—
Wisconsin	326	5,602	13,206	2,260	10,008	6,077	545	—
Total	**116,370**	**90,815**	**574,392**	**383,131**	**350,697**	**341,850**	**5,821**	**13,486**
PAD District 3								
Alabama	1,401	75,582	85,535	13,998	771	63	—	—
Arkansas	6,970	—	36,934	106,908	—	—	—	—
Louisiana	76,605	84,689	799,309	784,870	119,773	2,220	158,383	136,123
Mississippi	—	1,584	11,459	13,151	14,688	—	—	1,365
New Mexico	38,031	530	87,447	114,871	24	—	210	327
Texas	62,630	37,139	327,818	588,647	167,278	98,289	41,436	12,481
Total	**185,637**	**199,524**	**1,348,502**	**1,622,445**	**302,534**	**100,572**	**200,029**	**150,295**
PAD District 4								
Colorado	252	216	11,199	7,405	40	625	1,442	—
Idaho	839	5,086	3,648	12,296	—	—	—	—
Montana	7,449	25,428	6,855	1,100	39,147	—	—	—
Utah	9,610	9,120	34,944	44,412	11,496	28,411	—	—
Wyoming	1,428	13,946	2,569	1,175	4,904	26,045	2,086	—
Total	**19,579**	**53,796**	**59,215**	**66,388**	**55,586**	**55,081**	**3,527**	**—**
PAD District 5								
Alaska	9	—	—	36,677	—	—	—	—
Arizona	28	2	206	436	—	—	23,352	—
California	21,677	502	39,757	39,760	287,422	210,941	1,910	53,660
Hawaii	376	296	3,130	2,705	7,521	9,886	481,493	479,458
Nevada	433	362	2,256	1,259	435	0	102	—
Oregon	4,729	2,715	33,631	21,034	234	1,116	—	—
Washington	25,140	10,649	89,215	69,519	17,943	3,996	—	319
Total	**52,391**	**14,527**	**168,195**	**171,389**	**313,555**	**225,940**	**506,857**	**533,436**
U.S. Total	**1,418,630**	**1,326,870**	**3,963,753**	**4,011,361**	**1,162,547**	**776,019**	**7,825,363**	**6,183,985**

. . . By End Use

(Add 000 gal.)

N.B.: In 1985, EIA began publishing two sets of product tables, one for sales, the other for deliveries. Both are based on the same raw data. The sales tables reflect the questionnaire totals; the deliveries tables are adjustments to correlate them with other industry data. EIA's original objective was to switch to the sales tables and drop the deliveries tables. However, because of statistical disparities, this switch-over has been delayed indefinitely. The data on these pages are the deliveries tables and are compatible with prior *NPN* Factbook summaries even though the latter were then labelled "sales."

	Railroad		Vessel Bunkering		Military		All Other		Total	
Destination	1984	1985	1984	1985	1984	1985	1984	1985	1984	1985
PAD District 1										
New England States										
Connecticut	—	—	689	5,523	19,226	1,027	2,732	157	1,366,713	983,388
Maine	—	—	698	840	—	—	—	—	217,689	154,834
Massachusetts	—	—	5,462	9,451	676	40,146	4,337	979	943,442	1,261,940
New Hampshire	—	—	—	—	—	—	64	—	63,811	33,760
Rhode Island	—	—	—	—	—	—	—	—	40,245	51,318
Vermont	—	—	—	—	—	—	16	143	13,084	3,710
Central Atlantic States										
Delaware	—	—	15,694	9,433	5,736	—	7,803	192	138,198	56,378
District of Columbia	—	—	—	—	15,725	12,673	—	—	36,004	21,398
Maryland	—	—	74,050	49,647	274	17,998	1,337	427	453,406	275,601
New Jersey	—	2,554	484,947	438,128	9,693	8,234	6,633	128	1,987,108	1,585,676
New York	—	—	73,350	27,760	11,660	12,535	4,328	1,159	2,803,682	2,127,815
Pennsylvania	—	1,143	61,312	84,504	4,494	1,228	460	314	826,869	552,407
Lower Atlantic States										
Florida	—	—	161,700	273,424	87	9,737	415	534	1,367,555	1,365,643
Georgia	—	—	45,707	40,889	—	90	—	758	188,541	372,060
North Carolina	—	—	1,653	3,788	—	217	210	1,190	238,548	190,553
South Carolina	—	—	36,530	23,439	870	1,799	122	90	160,360	95,556
Virginia	—	—	78,574	111,520	24,137	42,033	4,119	4,557	382,569	344,637
West Virginia	—	4	—	—	—	—	—	—	45,103	29,481
Total	**—**	**3,700**	**1,040,365**	**1,078,347**	**92,578**	**147,718**	**32,575**	**10,628**	**11,272,926**	**9,506,154**
PAD District 2										
Illinois	2	48	4,743	6,816	684	336	5,551	271	315,200	205,744
Indiana	—	23	5,656	1,128	709	39	1,119	2,031	120,197	197,914
Iowa	14	—	189	—	—	—	35	1,937	7,573	9,462
Kansas	—	—	—	—	3,636	—	—	88	66,378	4,002
Kentucky	7	—	—	—	515	—	428	—	45,965	32,718
Michigan	—	—	93	1,342	4,421	3,970	336	32	138,185	138,501
Minnesota	—	1,673	3,697	4,660	—	—	2,526	—	62,522	51,456
Missouri	—	—	11	995	998	711	66	133	20,996	38,638
Nebraska	—	—	—	—	—	—	10	1,542	4,070	3,239
North Dakota	17	—	—	—	—	—	489	321	59,211	26,690
Ohio	—	—	1,447	—	—	—	2,602	11,470	157,145	115,060
Oklahoma	—	—	—	—	—	—	—	9	20,107	11,088
South Dakota	—	—	—	—	—	—	289	—	5,285	1,836
Tennessee	—	—	—	—	—	—	50	—	40,697	28,370
Wisconsin	856	—	7,268	5,191	—	—	2,812	—	35,021	19,131
Total	**896**	**1,743**	**23,103**	**20,132**	**10,964**	**5,056**	**16,311**	**17,835**	**1,098,552**	**883,848**
PAD District 3										
Alabama	83	—	62,649	64,084	23,847	4,725	32	—	174,319	158,452
Arkansas	—	—	—	—	—	—	—	—	43,904	106,908
Louisiana	9	—	712,640	707,672	8,943	—	208,588	214,443	2,084,251	1,930,017
Mississippi	—	—	73,607	45,473	—	—	—	—	99,754	61,573
New Mexico	15	—	—	—	—	—	76,819	—	202,546	115,727
Texas	—	—	1,035,511	884,970	37,353	279	390,326	191,448	2,062,351	1,313,252
Total	**107**	**—**	**1,884,407**	**1,702,199**	**70,143**	**5,004**	**675,765**	**405,891**	**4,667,124**	**4,185,930**
PAD District 4										
Colorado	681	680	—	0	—	49	—	—	13,614	8,975
Idaho	—	—	—	—	—	—	9	—	4,495	17,382
Montana	112	—	—	—	—	5	3,090	349	56,653	26,883
Utah	—	—	—	—	12,906	—	771	—	69,727	81,942
Wyoming	—	40	—	—	—	—	4,964	1,481	15,951	42,688
Total	**793**	**720**	**—**	**0**	**12,906**	**54**	**8,833**	**1,831**	**160,440**	**177,870**
PAD District 5										
Alaska	—	—	2,799	947	—	—	—	—	2,808	37,623
Arizona	—	—	—	—	—	—	—	—	23,586	438
California	—	—	2,429,224	2,168,190	20,937	26,487	26,487	15,914	2,827,413	2,515,454
Hawaii	—	—	57,628	74,539	14,559	3,137	7,474	6,536	572,181	576,556
Nevada	—	—	—	—	142	—	9	—	3,377	1,621
Oregon	—	—	166,176	156,147	—	24	747	1,749	205,517	182,785
Washington	—	—	83,429	273,061	—	5,438	707	19	216,434	363,000
Total	**—**	**—**	**2,739,255**	**2,672,884**	**35,639**	**35,085**	**35,424**	**24,217**	**3,851,316**	**3,677,478**
U.S. Total	**1,796**	**6,163**	**5,687,130**	**5,473,562**	**222,230**	**192,918**	**768,906**	**460,402**	**21,050,358**	**18,431,280**

Source: Energy Information Administration, Petroleum Marketing Monthly, July, 1986.

Distillate Deliveries by Annual Uses

(Add 000 bbl.)

Year	Residential	Commercial	Industrial	Farm	Oil Company	Electric Utilities	Diesel	Other	Total
1985 (a)	171,736	107,481	61,730	78,841	20,869	12,246	411,420	99,984	1,046,827
1984 (a)	164,529	116,729	56,113	70,819	21,623	16,405	439,786	139,173	1,041,217
1983 (a)	159,481	112,392	54,030	67,582	21,510	11,744	408,594	131,142	981,926
1982	180,760	75,669	71,340	68,453	29,482	12,134	375,124	164,253	974,864
1981	197,400	78,663	80,216	69,665	29,185	18,192	378,853	180,302	1,032,476
1980	227,261	92,136	86,089	73,615	24,205	31,812	377,136	176,355	1,086,709
1979	270,306	99,723	99,583	84,926	22,043	46,579	392,614	198,600	1,214,374

(a) In 1984, (as it did in 1979), Energy Information Administration revised some of its sampling procedures and adjusted some of the categories to reflect market volumes. Thus the 1984 and 1983 data are estimates and may not be truly comparable to 1982 and the preceding years. Also, see special caveat at the top of the pages that follow.

Residual Deliveries by Annual Uses

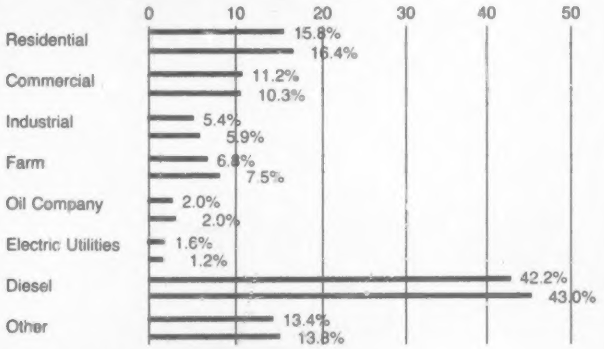
(Add 000 bbl.)

Year	Vessel Bunkering	Electric Utilities	Railroads	Oil Companies	Industrial	Commercial	Military	Other	Total
1985	130,323	147,381	147	18,477	95,509	31,592	4,593	10,962	438,840
1984 (a)	135,408	186,318	43	27,680	94,375	33,777	5,291	18,307	501,199
1983 (a)	136,290	204,238	47	28,604	93,624	35,979	5,411	14,412	518,604
1982	152,586	227,419	170	45,319	122,619	65,781	7,829	4,784	626,510
1981	188,632	325,486	178	51,870	117,024	67,035	7,008	4,795	762,030
1980	213,131	390,105	665	59,519	163,564	98,034	8,066	4,382	937,466
1979	190,543	486,636	245	51,062	198,759	82,729	7,736	16,900	1,034,610

(a) See Footnote (a) in distillate summaries above.

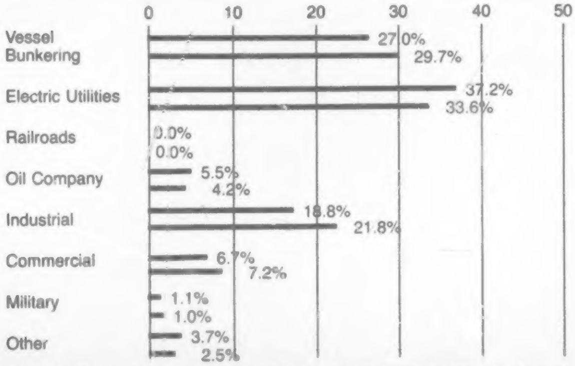
Distillate Deliveries by Use As Percent of Total

1984 = 1,041,217 bbl. 1985 = 1,046,827 bbl.



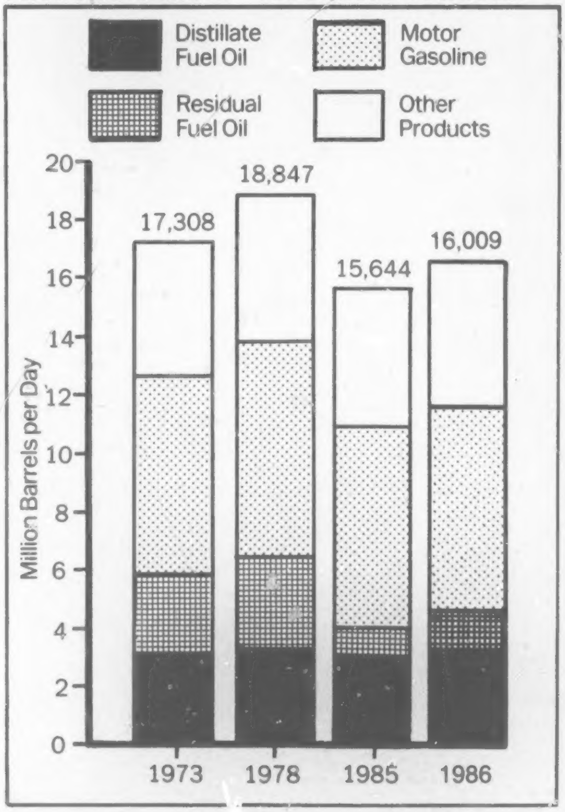
Residual Deliveries by Use As Percent of Total

1984 = 501,199,000 bbl. 1985 = 430,840 bbl.



Source: Deliveries. See caveat at top of following pages of Fuel Oil and Kerosine in 1985. Energy Information Administration, Petroleum Marketing Monthly, July 1986.

Fuel Oil Demand vs. Other Products



N.B.—1978 was peak year of consumption for all products, including distillates and gasoline. Peaks for residual and other products at slightly higher levels came in 1979.

Source: Energy Information Administration data from Monthly Energy Review; Graph by NPN.

How Fuel Oil Marketers Evaluate Issues and Problems

Government Interference

	Critical	Very Important	Important	Not Important
New England	34.3%	28.1%	21.9%	15.7%
Mid-Atlantic	33.2	31.3	19.4	16.1
South	31.3	31.3	25.0	12.4
Midwest	48.0	30.0	12.0	10.0
West	57.9	26.3	—	15.8
All Sectors	**40.9%**	**29.4%**	**15.7%**	**14.0%**

Competition from Utilities

	Critical	Very Important	Important	Not Important
New England	21.9%	21.9%	21.9%	34.3%
Mid-Atlantic	29.9	28.3	14.9	26.9
South	37.5	12.5	25.0	25.0
Midwest	32.0	30.0	22.0	16.0
West	47.4	26.3	5.3	21.0
All Sectors	**33.7%**	**23.8%**	**17.8%**	**24.6%**

Competition from Majors

	Critical	Very Important	Important	Not Important
New England	18.8%	21.9%	28.1%	31.2%
Mid-Atlantic	13.4	20.9	16.4	49.3
South	12.5	31.3	18.8	37.4
Midwest	14.0	34.0	28.0	24.0
West	36.8	15.8	10.5	36.9
All Sectors	**19.1%**	**24.8%**	**20.4%**	**35.8%**

Declining Supplier Population

	Critical	Very Important	Important	Not Important
New England	3.1%	28.1%	37.5%	31.3%
Mid-Atlantic	5.9	14.9	33.2	46.0
South	12.5	6.3	12.5	68.7
Midwest	6.0	16.0	36.0	42.0
West	10.5	15.8	15.8	57.9
All Sectors	**7.6%**	**16.2%**	**27.0%**	**49.2%**

Strong Internal Controls

	Critical	Very Important	Important	Not Important
New England	12.5%	18.8%	25.0%	43.7%
Mid-Atlantic	4.5	19.4	34.3	41.8
South	6.3	31.3	12.5	49.9
Midwest	6.0	22.0	24.0	48.0
West	5.3	21.1	42.1	31.5
All Sectors	**6.9%**	**22.5%**	**27.6%**	**43.0%**

Ability to Increase Sales

	Critical	Very Important	Important	Not Important
New England	28.1%	40.6%	21.9%	9.4%
Mid-Atlantic	23.9	43.3	17.9	14.9
South	25.0	50.0	6.3	18.7
Midwest	34.0	36.0	20.0	10.0
West	47.4	26.3	10.5	15.8
All Sectors	**31.7%**	**39.2%**	**15.3%**	**13.8%**

Hire/Retain Good People

	Critical	Very Important	Important	Not Important
New England	50.0%	34.3%	9.4%	6.3%
Mid-Atlantic	22.4	37.3	17.4	22.4
South	12.5	37.5	12.5	37.5
Midwest	16.0	32.0	24.0	28.0
West	45.5	47.4	5.3	1.8
All Sectors	**29.3%**	**37.7%**	**13.8%**	**19.2%**

Reduction in Company Overhead

	Critical	Very Important	Important	Not Important
New England	15.6%	37.5%	31.3%	15.6%
Mid-Atlantic	17.9	41.8	19.4	20.9
South	18.8	6.3	31.3	43.6
Midwest	28.0	38.0	26.0	8.0
West	31.6	36.8	21.1	10.5
All Sectors	**22.4%**	**32.1%**	**25.8%**	**19.7%**

Source: Fuel Oil News, A Hunter Energy Network Publication, December 1986.

Industry Profiles—1986

Average Size of Business

	No. Residential Fuel Oil Accts	No. C/I Customers	Vol. Distillate	Vol. Residual	Vol. Gasoline	No. Employees
New England	2,364	290	2,487,143 gal.	2,704,000 gal.	2,006,000 gal.	16.5
Mid-Atlantic	1,837	273	3,248,319	1,123,889	3,390,842	18.7
South	1,270	101	2,633,333	N/R	3,818,333	10.3
Midwest	305	100	1,097,790	1,315,000	2,049,769	10.0
West	1,303	360	1,832,441	89,400	2,751,269	11.0
All Sections	**1,416**	**225**	**2,263,805**	**1,308,072**	**2,203,243**	**13.3**

N/R—Not Reported

Petroleum Products Sold (% of Total Volume)

	No. 2	No. 1	No. 4	No. 5 & 6
New England	68.8%	5.7%	0.3%	0.6%
Mid-Atlantic	54.7	7.2	0.7	2.1
South	38.0	8.8	*	*
Midwest	21.9	6.0	*	0.7
West	46.7	3.6	*	0.3
All Sections	**46.0%**	**6.3%**	**0.2%**	**0.7%**

	No. 2 for Diesel	Gasoline	LPG/LNG	Other
New England	8.1%	8.9%	2.6%	*
Mid-Atlantic	9.0	25.2	*	*
South	12.5	40.0	*	0.8
Midwest	6.0	51.2	1.1	1.0
West	26.5	35.5	1.3	0.7
All Sections	**12.4%**	**32.2%**	**1.0%**	**0.5%**

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*Less than .1%

Percent of Dealers Selling, Installing and Servicing Equipment

	Residential				
	Oil Burners	Gas Burners	Domestic Hot Water	Boilers	Hydronic Systems
New England	100%	9.1%	90.9%	81.8%	59.1%
Mid-Atlantic	100	41.2	76.5	58.8	29.4
South	I.D.	I.D.	I.D.	I.D.	I.D.
Midwest	100	I.D.	66.7	I.D.	I.D.
West	100	93.3	60.0	73.3	33.3
All Sections	**100%**	**47.9%**	**73.5%**	**71.3%**	**40.6%**

	Commercial/Industrial				
	Oil Burners	Gas Burners	Domestic Hot Water	Boilers	Hydronic Systems
New England	63.6%	9.1%	54.5%	54.5%	36.4%
Mid-Atlantic	58.8	5.9	29.4	35.3	17.6
South	I.D.	I.D.	I.D.	I.D.	I.D.
Midwest	I.D.	I.D.	I.D.	I.D.	I.D.
West	73.3	33.3	46.7	33.3	26.7
All Sections	**65.2%**	**16.1%**	**43.5%**	**41.0%**	**26.9%**

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*Less than .1%
I.D.—Insufficient Data

The Service Department—A Bird's Eye View

	Have Service Depts.	Average No. Calls per Year	Value of Parts/Inventory	Service Dept. Profitable	No. of Technicians	No. of Service Vans
New England	72.4%	2,454	$28,333	61.9%	4.9	4.8
Mid-Atlantic	53.1	2,208	23,111	35.3	5.4	6.5
South	16.7	600	3,000	100	1.0	1.0
Midwest	11.1	134	I.D.	33.3	1.4	1.0
West	42.5	5,111	20,375	52.9	3.9	3.6
All Sections	**39.2%**	**2,101**	**$18,704**	**56.7%**	**3.3**	**3.4**

I.D.—Insufficient Data.

Annual Sales by Type of Customer
(% of total customers served)

	Homes	Apts.	Educ.	Hospitals	Commercial	Industrial
New England	81.1%	5.4%	1.7%	0.4%	8.9%	7.5%
Mid-Atlantic	77.7	6.0	2.2	0.6	10.7	3.9
South	84.8	1.3	1.3	0.3	10.0	2.5
Midwest	68.1	4.6	2.1	1.4	12.9	23.8
West	76.5	3.0	0.8	1.0	12.4	4.7
All Sections	**77.6%**	**4.1%**	**1.6%**	**0.7%**	**11.0%**	**8.5%**

Electronic Data Applications
(Percent using for listed items)

	New England	Mid-Atlantic	South	Midwest	West	All Sections
Accounts receivable/billing	100.0%	90.5%	50.0%	95.5%	91.3%	85.5%
General ledger	63.6	57.1	50.0	72.7	73.9	63.4
Accounts payable	50.0	38.1	75.0	72.7	73.9	61.9
Payroll	27.3	38.1	50.0	63.6	47.8	45.4
Inventory reconciliation	54.5	33.3	25.0	59.1	47.8	43.9
Scheduling of deliveries	59.1	47.6	*	9.1	30.4	29.2
Excise tax reporting	13.6	23.8	25.0	27.3	52.2	28.4
Fixed asset management	22.7	23.8	*	36.4	56.5	27.9
Word processing	40.9	33.3	*	18.2	26.1	23.7
Tracking supplier costs	4.5	19.0	25.0	22.7	8.7	16.0
Pricing analysis	9.1	9.5	*	22.7	13.0	10.9
Oil price info. service/petro scan	4.5	14.5	*	4.5	8.7	6.4
Communications with stations	*	4.8	*	9.1	4.3	3.6

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*Less than .1%

Trucks per Marketer

	Average No. Del. Trucks	Average No. Trailers	Average Size		Optimum Size Preferred
			Largest	Smallest	
New England	4.7	1.9	3,185	1,996	2,956
Mid-Atlantic	7.5	2.5	2,964	2,200	2,704
South	4.7	1.5	2,810	1,475	2,075
Midwest	2.9	0.7	2,841	1,755	2,253
West	4.1	0.5	2,603	1,792	2,700
All Sections	**4.8**	**1.4**	**2,880**	**1,844**	**2,538**

Truck Tanks by Type

	Use			Prefer	
	Steel	Alum.	Both	Steel	Alum.
New England	40.7%	11.1%	44.4%	18.5%	59.3%
Mid-Atlantic	27.6	10.3	55.2	10.3	56.3
South	33.3	*	66.7	*	83.3
Midwest	76.5	11.8	8.8	47.1	35.3
West	25.6	5.1	61.5	20.5	59.0
All Sections	**40.7%**	**7.7%**	**47.3%**	**19.3%**	**58.6%**

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*Less than .1%

Engines by Type

	Use			Prefer	
	Diesel	Gas	Both	Diesel	Gas
New England	29.6%	11.1%	59.3%	74.1%	11.1%
Mid-Atlantic	28.1	18.8	53.1	71.9	12.5
South	*	*	100	66.7	16.7
Midwest	5.1	58.8	35.3	38.2	50.0
West	10.3	35.9	53.8	46.2	25.6
All Sections	**14.8%**	**24.9%**	**60.3%**	**59.4%**	**23.2%**

Source: Fuel Oil News, a Hunter Energy-Network Publication.

Average Drop (Gal.)

	275 Gal. Tanks
New England	168.9
Mid-Atlantic	171.0
South	175.3
Midwest	186.0
West	179.4
All Sections	**176.1**

	550 Gal. Tanks
New England	369.0
Mid-Atlantic	354.3
South	333.4
Midwest	399.6
West	387.5
All Sections	**368.8**

% Selling, Installing and Servicing Equipment

New England	75.9%
Mid-Atlantic	62.5
South	16.7
Midwest	11.4
West	35.0
All Sections	**40.3%**

By Types of Equipment

Residential

	Furnaces	Warm Air Systems
New England	95.5%	81.8%
Mid-Atlantic	82.4	76.5
South	I.D.	I.D.
Midwest	66.7	I.D.
West	93.3	60.0
All Sections	**84.5%**	**72.8%**

	Central A/C	Heat Pump
New England	18.2%	9.1%
Mid-Atlantic	41.2	11.8
South	I.D.	I.D.
Midwest	I.D.	I.D.
West	40.0	33.3
All Sections	**33.1%**	**18.1%**

	Continuous Air Circulation
New England	*
Mid-Atlantic	5.9
South	I.D.
Midwest	5.8
West	13.3
All Sections	**6.3%**

Commercial

	Furnaces	Warm Air Systems
New England	59.1%	40.9%
Mid-Atlantic	35.3	29.4
South	I.D.	I.D.
Midwest	66.7	I.D.
West	66.7	46.7
All Sections	**57.0%**	**39.0%**

	Central A/C	Heat Pump
New England	9.1%	4.5%
Mid-Atlantic	35.3	5.9
South	I.D.	I.D.
Midwest	I.D.	33.3
West	26.7	20.0
All Sections	**23.7%**	**15.9%**

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*Less than .1%
I.D.—Insufficient Data.

World Oil Production by Area

(Add 000 bbl.)

Year	United States	Canada	Latin American	Western Europe	Middle East	Africa	Asia-Pacific	Total Free World	Communist Nations	Total World
1985	3,274,553	531,805	2,284,900	1,369,480	3,761,235	1,722,075	1,142,450	14,136,588	5,352,360	19,488,948
1984	3,249,696	516,426	2,315,682	1,331,874	4,128,114	1,713,978	1,164,978	14,420,748	5,332,620	19,753,368
1983	3,170,999	494,940	2,205,505	1,236,630	4,215,750	1,609,650	1,024,555	13,956,019	5,241,400	19,197,419
1982	3,156,715	452,965	2,255,355	1,085,145	4,581,480	1,622,790	961,410	14,116,160	5,278,995	19,395,155
1981	3,128,624	469,025	2,179,415	955,570	5,749,480	1,672,065	1,027,110	15,181,445	5,192,125	20,376,699
1980	3,146,365	521,184	2,036,058	893,406	6,735,498	2,226,378	1,000,278	16,559,304	5,206,350	21,760,880
1979	3,121,310	546,040	1,919,535	828,550	7,868,670	2,423,600	1,051,200	17,752,140	5,118,030	22,876,935
1978	3,175,927	483,260	1,736,427	643,149	7,884,927	2,233,791	1,037,520	17,195,001	4,963,250	22,158,251
1977	3,009,265	482,021	1,647,362	489,328	8,186,851	2,276,007	1,017,244	17,108,078	4,792,617	21,900,695

Source: American Petroleum Institute Data Book, January 1987.

World Crude Oil Reserves by Area

(Add 000 bbl.)

Year (a)	United States	Canada	Latin America	Middle East	Africa	Asia-Pacific	Western Europe	Total Free World	Communist Nations	Total World
1986	28,416,000	6,500,000	84,242,400	398,075,710	56,734,050	18,855,800	26,412,600	619,196,500	81,370,000	709,566,560
1985	28,446,000	7,075,000	83,315,700	398,380,750	55,540,550	18,529,900	24,425,500	615,713,400	84,100,000	699,813,400
1984	27,735,000	6,730,000	81,675,900	370,100,800	56,970,000	18,969,400	23,019,940	585,137,600	84,600,000	669,737,600
1983	29,785,000	7,020,000	74,482,066	369,285,893	57,821,690	19,756,077	22,923,680	583,147,406	85,115,000	668,262,406
1982	29,426,000	7,300,000	84,982,270	362,839,950	56,171,630	19,150,800	24,634,500	584,505,150	85,845,000	670,350,150
1981	29,805,000	6,400,000	69,489,837	362,071,000	55,148,375	19,630,500	23,085,000	565,629,712	86,300,000	651,929,712
1980	27,051,289	6,800,000	56,472,500	361,947,300	57,072,100	19,355,200	23,476,400	522,174,789	90,000,000	642,174,789
1979	27,803,760	6,860,000	41,246,500	369,996,000	57,892,125	20,007,200	23,966,000	547,771,585	94,000,000	641,771,585
1978	29,486,402	5,970,872	40,370,000	366,166,000	59,200,150	19,749,270	26,862,500	547,805,194	98,000,000	645,805,194

(a) As of Jan. 1 of each year.
Source: American Petroleum Institute Data Book, January 1987.

World Crude Oil Refining Capacity by Area

(barrels per day)

Year	United States	Other Western Hemisphere	Total Western Hemisphere	Middle East	Africa	Asia-Pacific	Europe	Total Free World	Sino Soviet Bloc	Total World
1986	15,458,946	8,613,690	24,072,639	4,274,255	2,520,403	10,111,652	14,071,507	55,050,453	17,500,000	72,550,453
1985	15,656,769	9,457,706	24,857,706	4,052,673	2,447,156	10,393,562	15,654,622	57,664,488	17,500,000	75,164,488
1984	16,137,141	9,590,962	25,520,962	3,901,082	1,879,990	10,473,079	16,231,932	58,114,186	17,200,000	75,314,186
1983	16,859,337	9,873,816	26,773,153	3,685,333	1,822,105	10,902,204	17,124,989	60,327,784	16,873,000	77,200,784
1982	17,889,734	10,720,055	28,609,789	3,312,152	1,761,870	10,966,825	19,444,519	64,095,155	16,533,000	80,628,155
1981	18,620,520	10,716,881	29,337,401	3,729,646	1,697,658	10,554,691	20,205,799	65,524,895	16,036,500	81,561,395
1980	17,988,121	10,683,671	28,671,792	3,518,080	1,666,108	10,386,375	20,243,747	64,486,102	15,346,000	79,832,102
1979	17,440,885	10,273,030	27,713,915	3,546,029	1,667,608	10,284,966	20,328,614	63,541,132	14,748,000	78,289,132
1978	17,047,724	10,592,020	27,352,020	3,506,484	1,467,157	10,176,819	20,728,204	63,352,984	13,938,000	77,290,984

Source: America Petroleum institute Data Book, January 1987.

World Natural Gas Production by Area

(Add 000,000 cubic feet)

Year	United States	Canada	Latin America	Middle East	Africa	Asia-Pacific	Western Europe	Total Free World	Communist Nations	Total World
1985	—	—	—	—	—	—	—	—	—	—
1984	18,299,638	2,651,800	3,451,800	1,533,400	1,629,100	2,530,700	6,795,400	36,821,838	23,272,100	60,093,938
1983	16,822,144	2,414,100	3,340,500	1,633,000	1,143,800	2,187,700	6,383,400	33,924,644	21,383,000	55,307,644
1982	18,519,675	2,546,100	3,091,500	1,799,700	1,168,900	2,176,600	6,142,100	35,424,575	20,258,000	55,682,575
1981	19,955,823	2,623,000	3,227,000	1,542,000	1,947,000	2,765,000	6,906,000	39,187,701	19,210,000	58,397,701
1980	20,179,724	2,668,300	3,297,500	1,221,300	884,700	2,558,400	6,668,700	37,677,687	21,069,900	58,747,587
1979	20,471,260	3,646,500	2,610,000	1,624,700	1,027,900	1,827,900	6,866,800	38,075,060	19,591,400	57,666,460
1978	19,974,033	3,128,056	2,012,912	1,579,478	1,117,416	1,469,154	6,649,855	35,930,904	15,818,398	51,749,302
1977	20,025,463	3,230,672	1,865,734	1,506,982	919,464	1,329,016	6,502,502	35,379,833	14,720,257	50,100,090

Source: American Petroleum Institute Data Book, January 1987.

Crude Oil Reserves in 20 Leading Nations

	Reserves (Add 000 bbl.)		% of Free World Reserves		% of Total World Reserves	
Nation	1986	1985	1986	1985	1986	1985
Saudi Arabia (a)	168,800,000	169,000,000	27.3%	27.4%	24.1%	24.1%
Kuwait (a)	89,774,000	90,000,000	14.2	14.6	12.5	12.9
U.S.S.R.	61,000,000	63,000,000	—	—	8.7	9.0
Mexico	49,300,000	48,600,000	9.9	7.9	7.0	6.9
Iran	47,876,000	48,500,000	7.7	7.9	6.8	6.9
Iraq	44,110,000	44,500,000	7.1	7.2	6.3	6.4
Abu Dhabi	31,000,000	30,500,000	5.0	5.0	4.4	4.4
United States	28,416,000	28,446,000	4.6	4.6	4.1	4.1
Venezuela	25,591,000	25,845,000	4.1	4.2	3.7	3.4
Libya	21,300,000	21,100,000	3.4	3.4	3.0	3.0
China	18,420,000	19,100,000	3.0	3.4	2.6	2.7
Nigeria	16,600,000	16,650,000	2.7	2.7	2.3	2.4
United Kingdom	13,000,000	13,590,000	2.1	2.2	1.9	1.9
Norway	10,900,000	8,300,000	1.8	1.5	1.6	1.3
Algeria	8,820,000	9,000,000	1.4	1.4	1.3	1.2
Indonesia	8,850,000	8,650,000	1.4	1.3	1.3	1.2
Canada	6,500,000	7,075,000	1.0	1.1	0.9	1.0
Oman	4,000,000	3,500,000	0.6	0.6	0.6	0.5
Egypt	3,850,000	3,500,000	0.6	0.6	0.6	0.5
India	3,736,000	3,736,000	0.6	0.6	0.5	0.5
Total Free World	**619,196,560**	**615,713,400**				
Total World	**700,566,560**	**699,813,400**				

(a) Saudi Arabia and Kuwait share the production of the Neutral Zone, which had reserves of 5,380,000 bbl. in 1986 and 5,420,000 bbl. in 1985. These data are not included in the above figures.

Source: American Petroleum Institute, Basic Data Book, Vol. 7, No. 1, January 1987; percentage relationships by *NPN*.

Crude Production in 20 Leading Nations

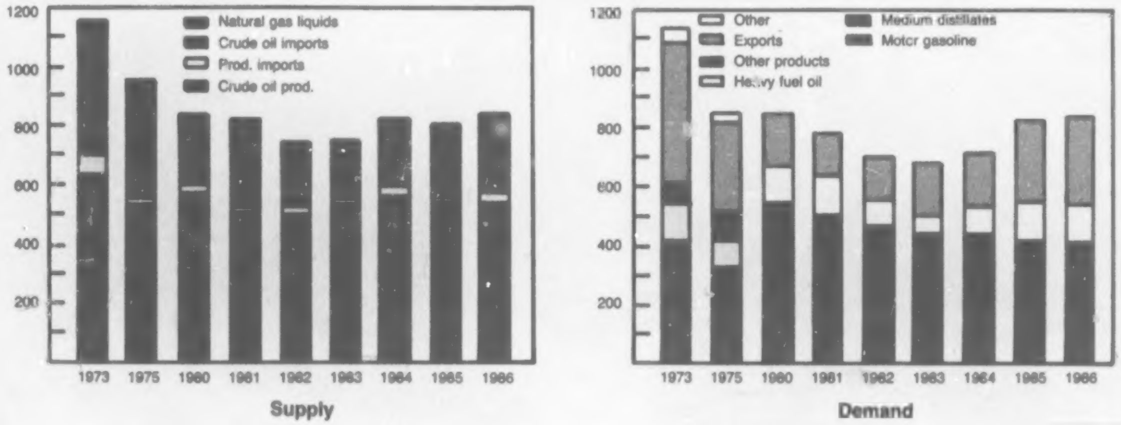
	Production (Add 000 bbl. and b/d)				% of Free World Production		% of Total World Production	
	1985		1984					
Nation	Total	b/d	Total	b/d	1985	1984	1985	1984
U.S.S.R.	4,288,385	11,749	4,344,420	11,903	—	—	22.0%	22.0%
United States (a)	3,274,553	8,971	3,294,696	8,903	23.2%	22.5%	16.8	16.5
Saudi Arabia (b)	1,200,850	3,290	1,626,504	4,456	8.5	11.3	6.2	8.2
Mexico	997,545	2,733	1,005,036	2,754	6.9	7.0	5.1	5.1
United Kingdom	924,545	2,533	927,810	2,542	6.5	6.4	4.7	4.7
China	911,040	2,496	834,480	2,286	6.4	5.8	4.7	4.2
Iran	824,170	2,258	800,442	2,193	5.8	5.6	4.2	4.1
Venezuela	591,665	1,621	663,558	1,818	4.2	4.6	3.0	3.3
Nigeria	534,360	1,464	509,838	1,397	3.8	3.5	2.7	2.6
Canada	531,805	1,457	516,426	1,415	3.8	3.6	2.7	2.6
Iraq	524,505	1,437	420,298	1,206	3.7	3.1	2.7	2.2
Indonesia	450,775	1,235	536,556	1,470	3.2	3.7	2.3	2.7
United Arab Emirates	418,290	1,146	401,502	1,100	3.0	2.8	2.1	2.0
Libya	390,185	1,069	392,718	1,076	2.8	2.7	2.0	2.0
Egypt	319,010	874	302,682	829	2.3	2.1	1.6	1.5
Kuwait (b)	314,630	862	333,792	914	2.2	2.3	1.6	1.7
Norway	286,525	785	256,200	702	2.0	1.8	1.5	1.3
Algeria	235,425	645	233,508	640	1.7	1.6	1.2	1.2
India	224,475	615	173,248	475	1.6	1.2	1.2	0.9
Brazil	211,700	580	(c)	(c)	1.5	(c)	1.0	(c)
Total Free World	**14,136,588**	**38,730**	**14,420,748**	**39,509**	—	—	—	—
Total World	**19,488,948**	**53,394**	**19,753,358**	**54,119**	—	—	—	—

(a) Includes lease condensate; (b) Excludes Neutral Zone production; (c) Not listed in top 20 in 1984.

Source: American Petroleum Institute Data Book, Vol. 7, No. 1, January 1987.

Canadian Imports Increase

Petroleum Supply-Demand in Canada
(millions of barrels)



While consumption (demand) for Canadian petroleum products were relatively stable in the 1985-86 time frame, crude oil and product imports showed pronounced increases in the same period, according to Statistics Canada.

The latest Canadian data shows an increase of about 25% in crude oil imports from 1985 to 1986 and a corresponding rise of about 20% in product imports. The combined increase in the import total for those two categories amounted to about 40 million barrels.

Demand for gasoline, heavy fuel oil and other products were down slightly in the 1985-86 period. Consumption of middle distillates was up a shade, while exports of petroleum products increased by almost 10%. Despite the substantial rise in petroleum imports, Canadian exports exceeded that total by 121 million barrels.

Refined Product Sales in 1986

(Cubic Meters*)

	Aviation Gas	Motor Gas	Aviation Turbine	Kerosine	Diesel	Light Fuel	Heavy Fuel	Lubes & Greases
Newfoundland	4,610	541,817	243,456	40,848	435,170	271,635	574,971	11,512
Prince Edward Island	2,303	167,295	5,996	14,166	48,454	129,528	9,672	2,142
Nova Scotia	1,734	1,100,774	177,639	65,143	588,158	809,210	613,494	19,109
New Brunswick	2,751	897,165	32,640	33,163	386,325	437,402	1,169,814	20,835
Quebec	23,135	6,826,602	848,690	167,944	2,513,335	2,422,694	1,876,948	137,680
Ontario	44,126	12,004,101	1,422,637	130,058	3,954,760	2,220,434	1,162,720	489,401
Manitoba	18,698	1,447,511	179,829	49,054	830,242	58,533	72,991	31,956
Saskatchewan	10,016	1,867,374	80,246	85,192	1,154,289	93,714	33,001	104,099
Alberta	17,863	4,324,618	695,977	32,372	2,699,947	80,631	38,253	108,203
British Columbia	31,554	3,600,109	605,777	82,027	2,115,920	366,851	748,659	92,925
Yukon	2,848	53,026	3,629	11,347	53,444	27,513	0	1,113
Northwest Territories	7,722	44,814	71,353	58,805	168,942	59,465	22,039	2,196
Total 1986	**167,360**	**32,875,206**	**4,367,869**	**770,119**	**14,948,986**	**6,977,610**	**6,322,562**	**966,040**
Total revised 1985	**176,462**	**32,730,527**	**4,299,790**	**858,403**	**15,142,642**	**7,372,304**	**5,868,091**	**922,744**

*Note: (cubic meters) × 6.2886 = barrels; also 1 barrel equals 42 U.S. gal.
Source: Statistics Canada

Canadian Oil Companies:

Company	Total branded retail outlets	Number of Provinces where marketed	BRANDED SERVICE STATIONS Supplied directly	Supplied through jobbers & commission agents	Lessee/Dealer operated	Salary operated	Commission operated	Full-serve only	Self-serve only
C Corp. inc.	221	2	221	0	37	7	177	91	128
Chevron Canada Ltd.	298	1	—	—	223	0	75	208	75
Esso Petroleum Canada	3,050	12	2,000	1,050	2,650	100	300	2,345	700
Fas Gas Oil Ltd.	71	2	71	0	0	0	71	60	11
Federated Co-operatives Ltd.	327	4	400	0	0	390	10	60	300
Husky Oil Marketing Co.	291	6	—	—	291	0	0	206	85
Irving Oil, Ltd. (E)	—	—	—	—	—	—	—	—	—
Mohawk Oil Co. Ltd.	313	5	253	60	186	83	44	204	84
Petro-Canada Products	3,880	12	—	—	3,143	174	399	2,857	1,029
Shell Canada Ltd. (F)	3,472	10	2,430	1,042	2,854	169	449	2,742	685
Sunoco Inc.	655	3	655	0	580	41	32	560	95
Sunys Petroleum Inc.	265	2	255	10	114	6	145	226	39
Texaco Canada	2,133	10	2,133	0	—	0	—	1,543	590
Turbo Resources Ltd.	250	5	229	21	76	0	174	240	10
Ultramar Canada Inc.	1,406	6	—	—	1,365	41	—	1,196	181

(E) Did not respond.
(F) Did not respond—figures are from *NPN 1986 Factbook.*

Brand Names of Gasoline and Motor Oils

C Corp. Inc.

Gasoline	Motor Oil
Shell (r)	Top Value
Top Value (r)	Castrol
Texaco (r)	Shell
Esso (r)	Suncor
Ultramar (p)	Ultramar
Suncor (p)	Petro-Canada
Petro-Canada (p)	Texaco
	Esso

Chevron Canada Ltd.

Gasoline	Motor Oil
Chevron (r,ur)	Chevron
Chevron Supreme (up)	

Esso Petroleum Canada

Gasoline	Motor Oil
Esso (r)	HD
Esso 2000 (ur)	HDX
Esso Extra Unleaded (up)	Protec Extra
	Protec Ultra

Fas Gas Oil Ltd.

Gasoline	Motor Oil
Fas Gas (r,ur,up)	Hi-Performance 5000
Bi-Lo (r,ur,up)	Hi-Performance 6000
Gasex (r,ur,up)	

Federated Co-operatives Ltd.

Gasoline	Motor Oil
Sonic (r,ur,p)	HD7
Tempo (r,ur,p)	DMO
	Sonic Silver
	Sonic Gold

Husky Oil Marketing Co.

Gasoline	Motor Oil
Husky (r,ur,up)	Husky Heavy Duty
	Husky Heavy Duty Special
	Husky Stratolube
	Husky Stratoplus
	Husky Superlube
	Husky Super Duty

Mohawk Oil Co. Ltd.

Gasoline	Motor Oil
Mohawk (r,ur,up)	Mohawk 10W30
Speedway (r,ur,up)	Mohawk Multigrade
Payless (r,ur,up)	Mohawk Premium
	Mohawk Heavy Duty Plus
	Duckhams
	Canadian Pride

Petro-Canada Products Inc.

Gasoline	Motor Oil
Leaded Regular Plus	Multi Motor Oil/Premium Turbo Tested M.O.
Unleaded Plus	Super Plus 15W40
The New 1 Super Unleaded	

Shell Canada Ltd.

Gasoline	Motor Oil
Shell (r,ur,up)	Shell X100
	Shell TLO

Sunoco, Inc.

Gasoline	Motor Oil
Sunoco Regular (r)	Dynalube
Sunoco ½&½ Leaded (r,up)	Sunfleet
	Special
Sunoco Premium Leaded (r,up)	CAM2
Sunoco Regular Unleaded (ur)	
Sunoco ½&½ Unleaded (ur,up)	
Sunoco Premium Unleaded (up)	
Pronto (r,ur,up)	

Sunys Petroleum Inc.

Gasoline	Motor Oil
Sunys (r,ur,p)	Drive N Save
Sipco (r,ur,p)	
Econobec (r,ur,p)	
Cansave (r,ur,p)	

Texaco Canada Ltd.

Gasoline	Motor Oil
Texaco (r,ur,up)	Havoline Supreme
	Havoline
	URSA Super Plus Multigrade
	URSA Super Plus Singlegrade

Turbo Resources Ltd.

Gasoline	Motor Oil
Regular Purple	Flo-Rite
Diesel Fuel Clear	Turbo
Diesel Fuel Purple	Red Ram

Ultramar Canada Inc.

Gasoline	Motor Oil
Regular Leaded	Ultralube
Regular Unleaded	Ultralube Super
Unleaded Premium	Ultralube Super Plus

KEY
Gasoline:
(r) Regular
(p) Premium
(ur) Unleaded
(up) Unleaded Premium
Motor Oils: Brand names are listed lowest-price grade first.

How Distribution is Organized

	BRANDED JOBBERS/COMMISSION AGENTS				BULK PLANTS				TERMINALS			
		SELLING ...				COMPANY OPERATED ...				COMPANY OPERATED ...		
Full-serve/ Self-serve	Total	Gasoline only	Fuel Oil only	Gasoline and Fuel Oil	Total	Salary operated	Commission operated	Jobber operated	Total	Salary operated	Commission operated	Jobber operated
2	—	—	—	—	—	—	—	—	—	—	—	—
15	45	0	0	45	45	0	45	0	3	3	0	0
5	550	0	0	550	600	0	600	0	0	0	0	0
0	0	—	—	—	0	—	—	0	0	—	—	0
40	9	2	0	7	300	300	0	—	—	—	—	—
0	25	0	0	25	25	—	—	25	0	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—
25	44	44	0	0	0	—	—	—	0	—	—	—
30	506	—	—	506	272	36	236	201	21	21	—	—
45	398	0	0	398	211	0	211	190	31	31	0	0
0	32	32	0	0	—	—	—	—	8	8	0	0
0	2	0	0	2	—	—	—	—	—	—	—	—
0	—	—	—	—	—	—	—	—	—	—	—	—
0	20	0	0	20	18	0	18	4	0	0	0	0
29	72	0	4	68	119	62	57	—	31	18	13	—

Branded Retail Outlets in Canada

Company	Total branded retail outlets	Number of Provinces	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Prince Edward Island	Manitoba	Saskatchewan	Alberta	British Columbia	Northwest Territories	Yukon
C Corp. inc.	221	2	—	—	—	127	94	—	—	—	—	—	—	—
Chevron Canada Ltd.	298	1	—	—	—	—	—	—	—	—	—	298	—	—
Esso Petroleum Canada	3,050	12	(A)	(A)	(A)	528	774	(A)	(B)	(B)	(B)	(C)	(B)	(C)
Fas Gas Oil Ltd.	71	2	—	—	—	—	—	—	—	5	66	—	—	—
Federated Co-operatives Ltd.	327	4	—	—	—	—	—	—	64	198	37	28	—	—
Husky Oil Marketing Co.	291	6	—	—	—	—	43	—	23	33	105	81	—	6
Irving Oil, Ltd. (E)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mohawk Oil Co. Ltd.	313	5	—	—	—	—	3	—	28	37	155	90	—	—
Petro-Canada Products	3,880	12	22	224	93	966	1,324	13	261	328	466	462	(D)	(D)
Shell Canada Ltd. (F)	3,472	10	1	114	111	849	1,205	28	306	220	295	343	—	—
Sunoco Inc.	655	3	—	—	—	170	483	—	—	—	2	—	—	—
Sunys Petroleum Inc.	265	2	—	—	—	40	225	—	—	—	—	—	—	—
Texaco Canada	2,133	10	34	108	108	542	733	25	115	124	202	142	—	—
Turbo Resources Ltd.	250	5	—	—	—	—	1	—	13	62	138	34	2	—
Ultramar Canada Inc.	1,406	6	250	70	31	873	167	15	—	—	—	—	—	—

(A) A total of 576 branded retail outlets are in Newfoundland, Nova Scotia, New Brunswick and Prince Edward Island.
(B) A total of 798 branded retail outlets are in Manitoba, Saskatchewan, Alberta and Northwest Territories.
(C) A total of 374 branded retail outlets are in British Columbia and Yukon.
(D) A total of 21 branded retail outlets are in Yukon and Northwest Territories.
(E) Did not respond.
(F) Did not respond—figures are from *NPN 1986 Factbook.*

Gasoline Shares by Key Categories—1986

Two years ago, a new study on the Canadian retail gasoline market in 1984 was published by MPSI Americas, Inc., Tulsa, Okla., a company specializing in international computer software and information services along with market research and planning. Now, MPSI has released its latest study, covering the year 1986.

Figures for both 1986 and 1985 are shown in the table below to provide an overview of trends within the various gasoline marketing segments.

The study presents, on both a national and regional basis, market shares and percentages of outlets for conventional service stations, big gasoline pumpers, convenience stores that sell gasoline, plus a general category of "others" including car washes, garages and other facilities where gasoline is secondary.

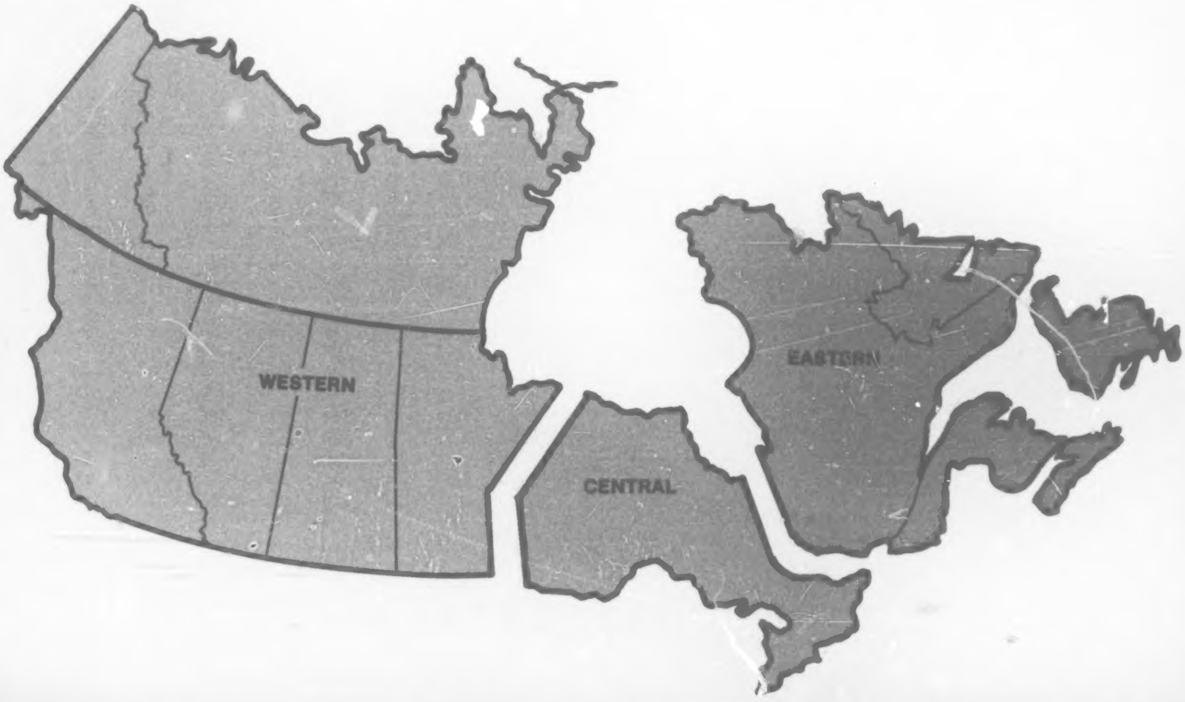
This study is concentrated primarily in the metropolitan areas of Canada, where most gasoline is marketed. It makes no attempt to count rural and highway vendors which, while important to the industry, do not add significantly to the overall consumption data in that country.

The study portrays an interesting contrast between the Canadian and U.S. retail markets (See the companion study of the U.S. market on p127). While the U.S. market has seen an extraordinary growth in C-store/gasoline type retail facilities, such outlets are only causing a ripple, in terms of numbers and market share, in Canada. Conventional-type stations still do most of the gasoline business in the Canadian market.

Regional and National Market Shares

	Service Stations		Pumpers		Convenience Food Stores		Others		Total	
	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985
Eastern Region										
• % of Outlets	53.8	53.1	24.5	24.4	6.4	6.2	15.4	16.3	100.0	100.0
• % of Volume	48.4	48.5	39.2	37.8	5.5	5.1	6.9	8.6	100.0	100.0
• Avg. Monthly Volume (Liters)	121,711	130,709	216,222	222,129	116,007	117,460	60,903	75,329	135,101	143,073
Central Region										
• % of Outlets	55.5	56.7	29.9	28.0	1.7	0.9	12.9	12.4	100.0	100.0
• % of Volume	51.1	53.6	41.8	41.0	1.2	0.8	5.9	4.6	100.0	100.0
• Avg. Monthly Volume (Liters)	182,389	193,198	277,598	311,129	139,750	193,000	90,169	79,630	198,173	211,899
Western Region										
• % of Outlets	44.5	46.9	36.8	35.8	4.6	3.8	14.1	13.5	100.0	100.0
• % of Volume	41.8	48.4	50.4	44.3	2.4	2.4	5.4	4.9	100.0	100.0
• Avg. Monthly Volume (Liters)	210,070	201,469	306,919	241,321	117,932	125,754	86,458	69,548	224,069	195,033
Total Canada										
• % of Outlets	52.1	53.2	29.7	28.6	4.1	3.8	14.1	14.4	100.0	100.0
• % of Volume	47.4	50.5	43.8	41.1	2.7	2.7	6.1	5.7	100.0	100.0
• Avg. Monthly Volume (Liters)	165,735	169,324	268,563	255,781	120,240	124,963	77,628	70,604	181,933	178,123

Source: MPSI Americas, Inc., Tulsa, Oklahoma.



Canadian Statistics

Motor Vehicle Registrations 1985

	Passenger Cars	Trucks	Buses	Motorcycles	Other	Total Vehicles	Trailers	Off-road		Licensed gasoline outlets
								Snowmobiles	Other	
Newfoundland	168,416	72,175	1,002	10,156	5,944	257,693	29,771	59,574	3,099	..
Prince Edward Island	54,533	18,823	417	2,141	212	76,126	1,310	40	590	..
Nova Scotia	366,172	142,279	1,518	18,775	323	529,267	42,857	5,905	6,884	1,067
New Brunswick	278,106	114,265	..	11,836	12,598	416,805	57,863	..	..	1,494
Quebec	2,483,413	300,570	12,801	105,478	71,837	2,974,099	550,463	73,605	226,021	..
Ontario	4,093,730	904,111	24,999	149,441	7,637	5,179,918	866,327	209,290	43,545	..
Manitoba	512,733	208,036	163	18,481	75	739,488	90,083	21,457	324	..
Saskatchewan	387,260	296,785	4,460	8,148	507	697,160	110,057	10,527	..	..
Alberta	1,289,040	386,201	7,600	46,446	..	1,729,287	303,131	24,500	14,449	..
British Columbia	1,468,413	626,743	..	79,876	..	2,175,032	258,054	49,970	..	..
Yukon	7,302	12,274	185	718	..	20,479	4,212	482	..	..
Northwest Territories	8,953	12,981	140	1,030	167	23,271	3,468	..	419	..
Canada	**11,118,071**	**3,095,243**	**53,285**	**452,526**	**99,500**	**14,818,625**	**2,317,596**	**455,350**	**295,331**	**2,561**

"Off-road other" includes farm tractors, construction equipment inc.
.. figures not available
Source: All tables courtesy of Statistics Canada.

Automobiles Per Household 1986

estimates in thousands

	Households	Total Households with Vehicles	Households with automobiles				without autos	Vans or trucks		Households without automobiles
			Total	1 auto	2 autos	3 or more autos		Households with 1	with 2 or more	
Newfoundland	165	128	104	83	17	4	61	49	—	37
Prince Edward Island	43	38	34	24	10	—	7	12	—	5
Nova Scotia	306	251	231	173	51	7	75	69	8	55
New Brunswick	240	203	186	141	38	7	54	62	6	37
Quebec	2,461	1,876	1,786	1,316	411	59	674	281	29	585
Ontario	3,371	2,787	2,655	1,733	764	158	716	586	51	585
Manitoba	397	336	316	219	81	16	81	95	17	61
Saskatchewan	373	329	298	213	66	18	75	122	36	44
Alberta	860	771	705	462	196	47	155	259	68	90
British Columbia	1,115	973	899	602	247	50	216	325	40	142
Canada 1986	**9,331**	**7,692**	**7,214**	**4,967**	**1,882**	**369**	**2,113**	**1,860**	**258**	**1,639**

—amount too small

New Motor Vehicle Sales

	Total, new motor vehicles	Passenger cars	Comm. vehicles	Cars			Commercial Vehicles	
				North America	Japan	Other Countries(1)	North America	Other Countries(1)
1986	1,510,950	1,091,117	419,833	761,867	198,410	130,840	368,419	51,414
1985	1,530,410	1,137,216	393,194	794,965	199,221	143,030	344,871	48,323
1984	1,283,502	971,210	312,292	724,932	171,204	75,074	273,604	38,688

(1) Excludes Japanese and North American manufactured vehicles.

Factory Sales of Auto Batteries

	1986	$	1985	$
Original Equipment	confidential	confidential	confidential	confidential
Replacement	2,555,068	100,023,895	2,938,804	108,907,650
Heavy-duty transport, motor coach, bus, diesel, starting batteries, for replacement	332,106	19,450,833	482,200	23,544,637

Drivers' Licenses 1985

	Operators (drivers & chauffers)	Temporary (instructor permits)
Newfoundland	280,237	6,472
Prince Edward Island	25,548	3,399
Nova Scotia	543,396	14,713
New Brunswick	409,683	24,501
Quebec	3,725,355	..
Ontario	5,660,419	..
Manitoba	609.494	..
Saskatchewan	647,121	32,189
Alberta	1,704,287	110,592
British Columbia	2,320,273	..
Yukon	16,734	1,031
Northwest Territories	21,095	1,330
Canada	**15,963,642**	**193,777**

Note: .. figures not available.

Principal Heating Fuels in 1986

(000 Households)

	Oil	Piped Gas	Bottled Gas	Electricity	Other	Wood	Total Households
Newfoundland	50	—	—	52	—	47	149
Prince Edward Island	25	—	—	—	—	11	37
Nova Scotia	151	—	4	32	6	51	243
New Brunswick	65	—	—	73	—	50	192
Quebec	322	71	—	654	—	140	1,190
Ontario	515	1,378	25	357	—	101	2,377
Manitoba	29	186	5	69	—	11	300
Saskatchewan	39	234	10	16	—	9	308
Alberta	15	604	14	7	—	6	647
British Columbia	151	445	5	136	—	90	829
Canada	**1,361**	**2,920**	**64**	**1,397**	**15**	**515**	**6,272**

Note: Data from a sample survey only.
—amount too small
... figures not applicable
"Other" includes Coal and Coke.

LPG Sales by States and Uses—1985

(Add 000 gal.)

	Residential and Commercial	Industrial (a)	Engine Fuel	Utility Gas	Farm	Other (b)	Total (c) (d)
Alabama	118,763	5,449	18,374	w	28,756	2,633	174,219
Alaska	w	w	w	0	w	w	14,889
Arizona	52,795	7,643	10,155	0	5,165	w	76,034
Arkansas	118,459	5,213	16,816	0	35,066*	718*	176,381
California	291,821	217,284	135,883	6,255*	46,156	9,428	776,882
Colorado	75,799	12,255	7,550	w	4,824	3,028*	105,256
Connecticut	32,515	12,769	2,990	w	833	350*	51,680
Delaware	30,156	1,923	455	w	7,434	w	41,825
Florida	304,977*	20,654	36,855	12,646	13,022	3,694	399,436
Georgia	201,104	18,768	20,012	1,364	45,195	2,892*	291,335
Hawaii	w	0	w	0	w	0	6,296
Idaho	17,965	7,868	6,609	0	2,780	1,008	36,230
Illinois	287,490	41,346	67,120	w	281,779	2,165*	788,693
Indiana	191,243	10,604	23,467	11,272	88,719	3,068*	328,805
Iowa	244,843	17,357	14,279	0	312,378	254*	591,080
Kansas	120,003	23,046*	15,142	0	31,222	337,833*	611,981
Kentucky	129,622	111,293*	15,633	350	9,220	w	284,430
Louisiana	56,225	26,709*	12,504	w	7,248	803*	952,434
Maine	17,734	5,347	1,445	w	20	w	26,533
Maryland & D.C.	50,275	8,991	5,738	w	5,819	1,521	75,501
Massachusetts	51,918	6,599	6,572	2,906	391	737	71,752
Michigan	361,807	54,980	46,217	w	51,964	88,300	720,361
Minnesota	196,148	27,246	19,538	w	111,201	637	356,330
Mississippi	108,810	41,048*	26,591	0	19,819	3,984	208,514
Missouri	285,648	28,843	21,893	w	27,139	560	372,837
Montana	33,118	10,228	5,654	0	11,415	1,122	61,597
Nebraska	80,601	7,612	9,004	0	79,377	131*	176,763
Nevada	35,912	4,135*	3,457	0	2,413	969	47,390
New Hampshire	43,536	7,703	2,261	10,080	97	w	64,713
New Jersey	46,726	16,467*	10,454	w	2,371	1,916*	232,104
New Mexico	118,970	4,279	10,863	0	5,131	403	140,102
New York	164,169	19,200	13,880	w	8,334	1,844*	207,808
North Carolina	162,860	29,916	17,312	w	106,822	3,481*	323,396
North Dakota	13,799	3,706	1,683	w	7,562	w	26,811
Ohio	272,891	49,932*	60,171	w	70,826	1,683*	603,114
Oklahoma	162,353*	69,985*	21,217	3,393	45,606	1,349*	400,132
Oregon	28,504	13,281*	21,189*	0	3,881	w	67,666
Pennsylvania	116,973	35,412	23,474	w	17,040	1,148*	228,144*
Rhode Island	14,199	2,530	2,100	0	w	2,055	20,888
South Carolina	94,570*	9,693	13,209	974	14,392	828*	134,045
South Dakota	57,481	850	3,826	w	23,312	w	86,254
Tennessee	98,772	16,941	26,431	0	6,013	428*	149,979
Texas	409,005	95,914	69,802	2,287	77,515	30,636	3,749,674
Utah	32,705*	8,091*	8,411	w	1,979	1,732*	60,931
Vermont	30,595	1,125	1,268	w	193	w	33,848
Virginia	91,851	27,741*	9,637	4,676	21,658	6,247*	162,529
Washington	30,506	11,276*	36,545	0	6,126	w	88,627
West Virginia	11,437	1,601	2,071	w	780	w	35,663
Wisconsin	248,784	24,421	29,202	2,785	54,243	1,801*	361,689
Wyoming	23,514*	28,819*	5,036	w	1,453*	622*	76,241
U.S. Total	**5,793,556**	**1,299,389**	**942,254**	**155,870**	**1,705,833**	**875,858**	**15,079,822**

* Propane only; butane withheld; w-data withheld to avoid disclosing reports for individual companies. These reports are included in totals, however; (a) includes refinery fuel; (b) includes secondary recovery of petroleum and synthetic natural gas feed stocks; (c) includes chemical use; (d) 1985 LPG sales as reported by API differ from 1985 LP-Gas Production reported by Energy Information Administration because API sources concluded that the EIA report understated butane used in refineries for gasoline production.

Source: Liquefied Petroleum Gas Assn./American Petroleum Institute, 1985 LP-Gas Market Facts.

LPG Sales Trends in Recent Years (a)

Major Domestic Markets (Add 000,000 gal.)

	Total U.S. Sales		Residential-Commercial		Chemical		Internal Combustion		Industrial		Farm	
Year	Vol.	% Change	Vol.	% Change	Vol.	% Change	Vol.	% Change	Vol.	% Change	Vol.	% Change
1985..........	15,080	(0.3%)	5,794	11.4%	4,307	4.8%	942	1.0%	1,299	(31.2%)	1,706	2.6%
1984..........	15,129	10.5	5,203	(14.6)	4,109	26.7	951	(30.2)	1,888	54.7	1,663	40.7
1983..........	13,688	(1.6)	6,090	(1.5)	3,244	(3.5)	1,362	9.8	1,220	(6.9)	1,183	(8.0)
1982..........	13,915	(3.3)	6,180	(2.1)	3,362	(3.2)	1,240	9.7	1,310	(5.0)	1,285	(12.1)
1981..........	14,395	(3.8)	6,310	(3.4)	3,474	(3.1)	1,130	3.6	1,380	(10.9)	1,463	(4.4)
1980..........	14,969	(8.9)	6,531	(4.9)	3,584	(11.3)	1,090	4.3	1,548	(20.2)	1,529	(15.4)
1979..........	16,432	9.4	6,871	1.2	4,043	12.7	1,045	5.5	1,940	44.8	1,764	—

This is as far back as the restated API/LPGA data go on sales trends. The figures below are Energy Information Administration data and are not essentially comparable to the restated data above. In the data below, the last column was for "all other uses" instead of farm consumption.

	Total U.S. Sales		Residential-Commercial		Chemical		Internal Combustion		Industrial		Farm	
Year	Vol.	% Change	Vol.	% Change	Vol.	% Change	Vol.	% Change	Vol.	% Change	Vol.	% Change
1978..........	15,023	−3.1	6,954	−3.0	3,563	−0.4	993	−13.3	1,340	28.4	2,172	−15.6
1977..........	15,508	−3.2	7,169	−2.0	3,578	−12.4	1,145	−2.1	1,044	—	2,573	7.5
1976..........	16,013	5.3	7,313	4.2	4,085	−2.1	1,170	—	1,052	−2.8	2,394	35.8
1975..........	15,200	−6.8	7,020	−2.9	4.172	−23.0	1,162	−11.3	1,082	1.2	1,763	38.3
1970..........	15,271	26.6	7,569	41.6	5,003	24.8	1,336	11.9	897	32.1	467	125.6
1965..........	11,434	33.7	5,346	26.5	4,008	54.6	1,194	33.0	679	13.9	207	−23.0
1960..........	8,579	40.1	4,225	50.8	2,593	36.5	898	37.7	596	13.7	269	9.3

(a) In 1984, Energy Information Administration suddenly terminated collection of LPG sales data for budgetary reasons. American Petroleum Institute, Liquefied Petroleum Gas Assn. and others began a cooperative effort to provide the missing data annually. The 1983 and 1984 data were published in March, 1986. The new information is based on EIA data, plus API and LPGA, and are restated for the years 1979 through 1984. Utility gas, refinery fuel and miscellaneous uses are included in U.S. totals but are not stated separately.

Source: National LP-Gas Assn., 1985 LP-Gas Market Facts, published 1986.

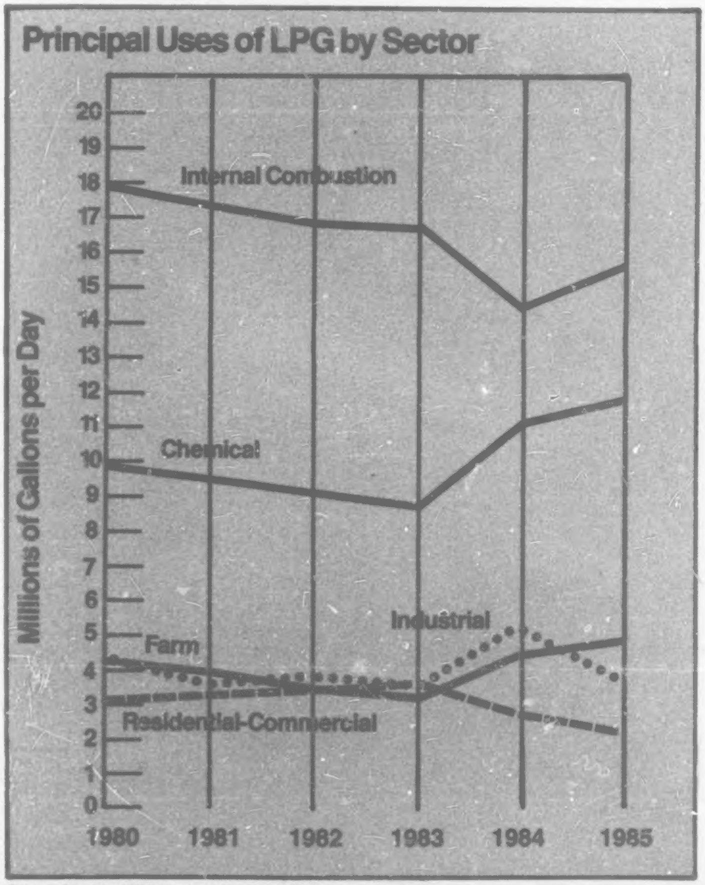
LPG Consumption Flattens Out in 1985 After 10.5% Increase in 1984

Consumption of liquefied petroleum gases levelled off in 1985 following a 10.5% spurt in the preceding year. It was nevertheless the second best year for LP-G sales in recent history. The last time consumption exceeded the current levels was in 1979 when demand ranged around 16.4-billion gal.

Residential-commercial consumption, after five consecutive years of decline, jumped 11.4% in 1985. The total of 5.8-billion gal. was, however, almost 2-billion gal. less than the all-time peak set back in 1970—a total of 7.6-billion gal. at that time.

Chemical use also rose again in 1985 for the second consecutive year but it was only a minor increase of 4.8% compared with the preceding year's zoom of 26.7%. On the other hand, industrial consumption plummeted 31.2% in 1985, versus an increase of 54.7% in 1984. Farm use also was on the slow side, rising only 2.6% in 1985 compared with a 40.7% increase the year before.

In the table above, LP-G used in refineries is included in the industrial consumption column while that used as utility gas, secondary recovery of petroleum and as a synthetic natural gas feedstock is included in the U.S. total.



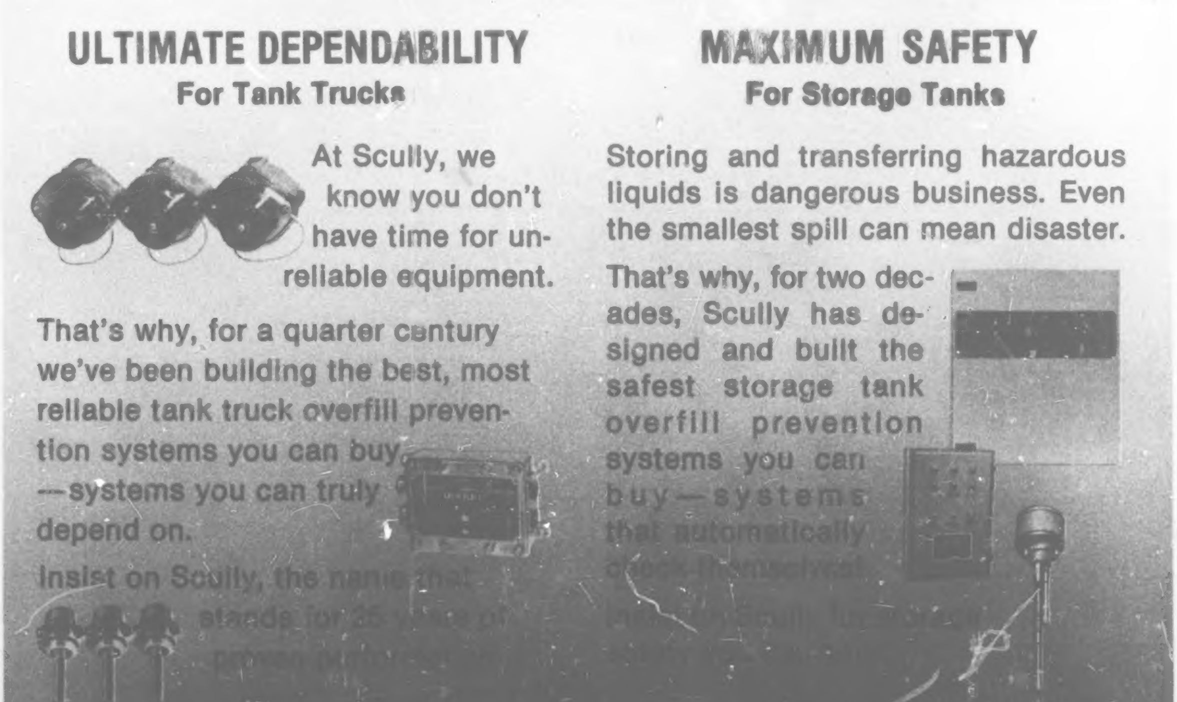
Source: Graph by *NPN* based on Liquefied Petroleum Gas Assn./American Petroleum Institute data.

LPG Supply and Disposition 1974-1986

(Add 000 b/d)

	Supply			Disposition			(Million bbl.)
	Total Production	Imports	Stock Withdrawal	Refinery Inputs	Exports	Products Supplies	Ending Stocks (a)
1986 January	1,874	277	75	382	47	1,797	70
February	1,850	208	98	330	75	1,752	68
March	1,726	199	−90	252	47	1,536	70
April	1,708	134	−203	259	33	1,347	77
May	1,759	189	−339	265	40	1,305	87
June	1,721	253	−348	230	25	1,371	97
July	1,734	303	−600	203	50	1,184	116
August	1,689	271	−326	243	53	1,338	126
September	1,651	282	−141	291	27	1,474	130
October	1,644	224	247	332	26	1,767	123
November	1,706	310	241	418	53	1,785	116
December	1,692	227	415	456	33	1,845	103
Average	**1,729**	**241**	**−82**	**305**	**42**	**1,540**	—
1985 January	1,676	255	399	322	70	1,937	88
February	1,689	237	330	320	72	1,865	79
March	1,684	223	29	297	52	1,588	78
April	1,695	156	−143	262	78	1,368	83
May	1,713	138	−219	239	40	1,353	89
June	1,728	181	−175	250	51	1,432	95
July	1,713	131	−107	249	68	1,420	98
August	1,710	153	−98	277	80	1,409	101
September	1,667	132	61	321	29	1,510	99
October	1,669	209	304	340	47	1,794	90
November	1,716	188	192	387	88	1,620	84
December	1,786	239	337	386	75	1,901	74
Average	**1,704**	**187**	**75**	**304**	**62**	**1,555**	—
1984 Average	**1,697**	**195**	**19**	**291**	**48**	**1,572**	**101**
1983 Average	**1,642**	**190**	**4**	**253**	**73**	**1,509**	**101(b)**
1982 Average	**1,528**	**226**	**111**	**300**	**65**	**1,499**	**94(b)**
1981 Average	**1,571**	**244**	**−18(b)**	**289**	**42**	**1,466**	**135**
1980 Average	**1,535**	**216**	**−27**	**233**	**21**	**1,469**	**120(b)**
1979 Average	**1,556**	**217**	**70**	**236**	**15**	**1,592**	**111**
1978 Average	**1,537**	**123**	**12**	**239**	**20**	**1,413**	**132**
1977 Average	**1,566**	**161**	**−55**	**233**	**18**	**1,422**	**136**
1976 Average	**1,535**	**130**	**24**	**260**	**25**	**1,404**	**116**
1975 Average	**1,527**	**112**	**−35(b)**	**246**	**26**	**1,333**	**125**
1974 Average	**1,565**	**123**	**−38**	**220**	**25**	**1,406**	**113(b)**

(a) Stocks are totals as of end of period; (b) In January 1975, 1981, 1983 and 1984, a new stock basis was established affecting stocks reported and stock withdrawal.
Source: Petroleum Supply Monthly, December 1986, published in February 1987.



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Lube Sales Edge Upwards in 1986

Lubricant sales rose slightly in 1986—only three-tenths of a point yet nevertheless the first upturn in two years—according to National Petroleum Refiners Assn., which said the total included automotive and industrial oils and greases. Automotive oils were down 2.1%, however.

The NPRA report does not give volumes, only indexes and percentages which are based on the reports of participating companies. To preserve the confidentiality aspects of company sales, the reports are given to an independent auditor who converts them into indexes on an industry-wide basis.

The product categories, as defined by NPRA, are these: automotive oil—engine oils, automatic transmission fluids, gear oils and aviation oils; industrial oil—industrial engine oils, metalworking fluids, process oils and general industrial oils; grease—both automotive and industrial greases.

All finished lubricants are included in the NPRA totals. Not included, however, are exports and lube base stocks sold for further blending into finished lubricants.

NPRA stated that the data reflect the sales of the participating companies only. Sales of finished lubricants by other companies (commonly known as independent compound blenders) are not covered.

For its category breakdown, NPRA used 55.5% of the sales for automotive oils, 42.3% for industrial oils, and 2.2% for greases.

Quarterly Indexes on Lubricant Sales

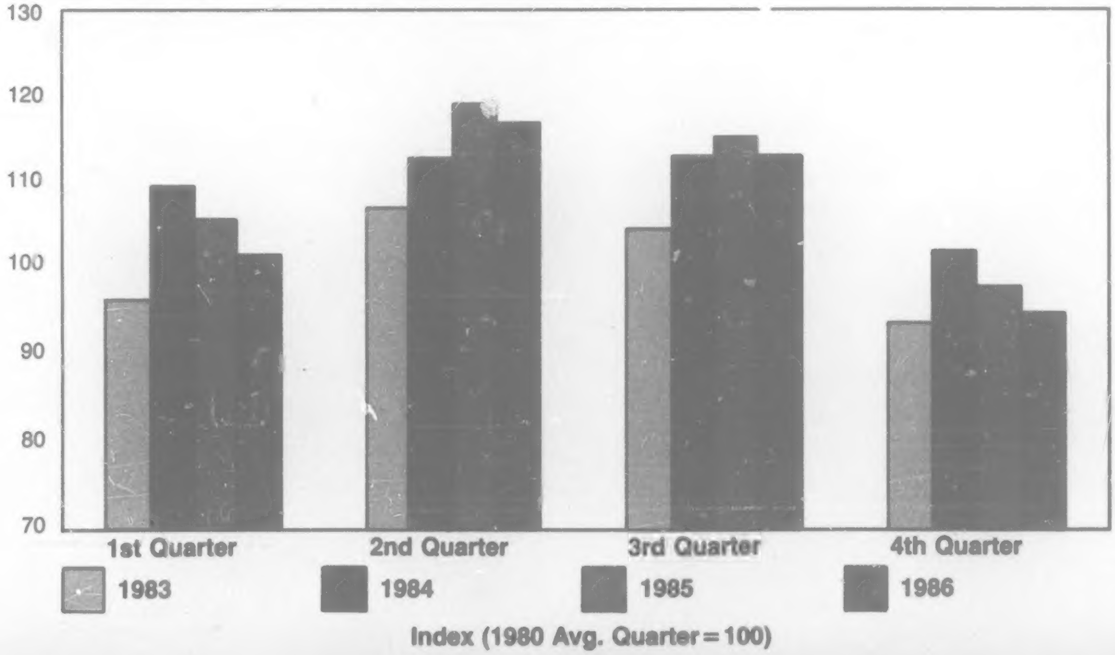
	Quarters				Full
	1	2	3	4	Year
1986	106.5	107.2	104.6	94.4	101.7
1985	99.5	107.3	103.2	95.6	101.4
1984	102.4	108.4	105.9	97.1	103.5
1983	89.3	99.1	98.0	92.5	94.7
1982	91.8	95.9	92.4	81.4	95.2

Percentage Changes by Products and Quarters

	Quarters				Full
1986 vs. 1985	1	2	3	4	Year
Automotive	– 4.2%	– 2.5%	– 0.4%	– 1.1%	– 2.1%
Industrial	8.8	4.5	4.1	– 1.9	3.9
Grease	– 1.6	– 8.9	3.3	5.2	– 0.7
Total	**1.0**	**– 0.1**	**1.4**	**– 1.3**	**0.2**
1985 vs. 1984					
Automotive	– 2.9%	3.0%	0.7%	– 3.3%	– 0.5%
Industrial	– 2.7	– 7.0	– 7.2	1.6	– 3.9
Grease	– 4.4	– 4.0	– 6.4	–11.1	– 6.5
Total	**– 2.9**	**– 1.0**	**– 2.5**	**– 1.6**	**– 2.0**
1984 vs. 1983					
Automotive	15.0%	7.2%	5.1%	8.5%	9.0%
Industrial	13.7	11.9	11.0	0.5	9.2
Grease	29.1	32.9	10.9	1.2	16.9
Total	**14.8**	**9.5**	**8.1**	**5.0**	**9.3**
1983 vs. 1982					
Automotive	1.9%	5.1%	6.6%	10.6%	5.9%
Industrial	– 5.0	2.9	6.4	18.0	5.0
Grease	–29.8	–23.2	–10.5	16.7	–12.8
Total	**– 1.7**	**3.4**	**6.0**	**13.6**	**5.1**

N.B. For the index, the average-quarter in 1980 = 100%; the base for quarterly indexes is 1980 full year sales for the reporting companies divided by 4.

Automotive Lubricant Sales



Lube Sales Inch Upward (continued)

Lubricant sales rose fractionally in 1985, National Petroleum Refiners Assn. says in its latest annual study released in October.

The increase amounted to a mere 5 million gal. out of a total of 2.3 billion gal. for the year. This was an increase of 0.2% over 1984, hardly enough for a statistician to notice.

This total embraces all engine oils, including transmission and hydraulic oils, gear oils and grease. The latter, normally a solid, was converted to gallons by assigning a ratio of 1 gal. for each 7.5 lbs.

NPRA's annual study for 1986 is due to be released around August 1, according to an association official. However, it is unlikely that the pattern of slow growth experienced over the past several years will change radically in the new report. This is primarily due to the fact that the extended intervals for chassis lubrications and oil changes recommended by car manufacturers for late model vehicles continue to dampen demand for engine lubricants. (For an update on the latest recommended intervals, see p167).

Consumption of conventional motor oils, i.e., those used primarily in passenger car engines, slipped slightly in 1985—about 9 million gal. out of a total of 1.1 billion gal. The 1984 demand, for the record, was 1,093 million gal., while for 1985 it was 1,084 million gal.

There were no changes of significance in the channels of distribution, the NPRA report says. A little more than half of all motor oil sales continue to be made through the retail segment—service stations, mass merchandisers, discount houses and the like. Commercial sales, that is those for fleets, farms and government, continue to take about one-third of the output.

Among the more interesting facets of the 1985 report are the tables dealing with multigrade and monograde consumption patterns.

In 1982, for example, 55.5% of the motor oil purchases were for monogrades. By the end of 1985, that figure had eroded to 35.3%—20 full percentage points.

There was a small upward movement in the multigrade purchase patterns in the retail segment. These moved from 69.1% in 1982 to 74.7% in 1985. More strikingly, the commercial area sales indicate the tide is running strongly toward multigrades and away from monogrades. In 1982, 65.4% of the commercial purchases represented monogrades. Last year, they had dropped to 53.9%.

The peak year for lubricant sales was 1979. The total was 2.5 billion gal., 6.6% more than the 1985 figure. Grease sales were higher in 1979, too—8 million gal. more, or a difference of 11.8%.

Copies of the NPRA report may be obtained by contacting NPRA's headquarters in Washington, D.C.

Lube Oil Sales in the U.S.*

	(mil. gal.)					% Chng.	% Chng.
	1985	1984	1983	1982	1979	'85 v. '84	'85 v. '79
					(Peak Yr.)		
All oils	2,272	2,271	2,114	1,198	2,435	0.3%	(6.5%)
Grease**	60	61	55	57	68	(1.6)	(11.8)
Total Lubes	2,337	2,332	2,119	2,049	2,503	0.2	(6.6)

*Includes automotive and industrial oils, but not aromatics or waxes;
**conversion rate 7.5 lb = 1 gal.

Channels of Distribution: Automotive Oils Only[1]

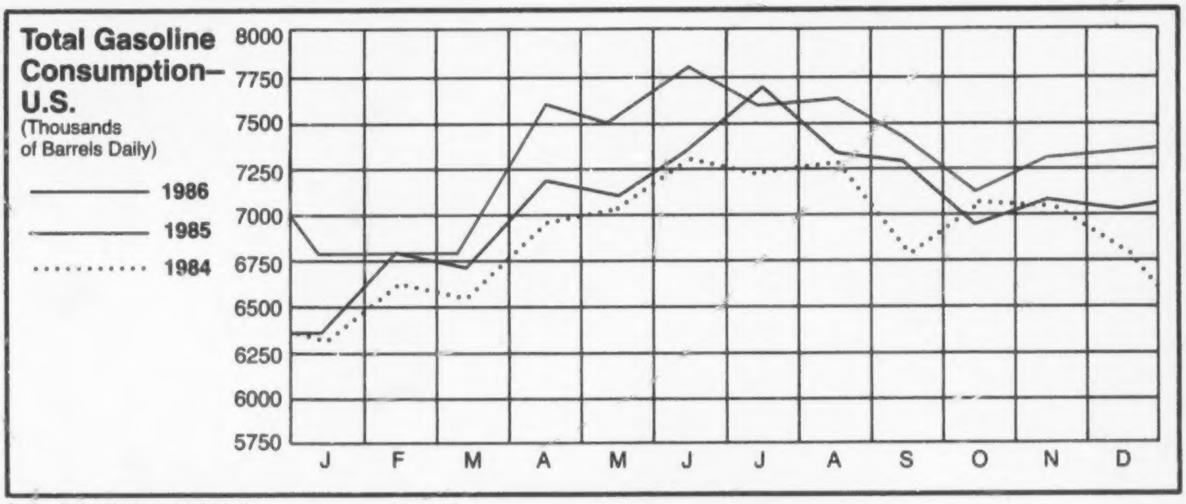
	1985	1984	1983	1982
Total Vol. (mil. gal.)	1,364	1,376	1,278	1,204
Retail[2]	52%	55%	55%	53%
Commercial[3]	35%	36%	37%	36%
Factory Fill	3%	4%	3%	4%
Undistrib.	10%	5%	5%	7%

[1] Includes engine oils, transmission and hydraulic fluids, and gear oils.
[2] Retail means oils sold through service stations and other retail outlets such as auto parts stores, car dealers, truck stops, chain stores, drug stores, discount stores, etc.;
[3] Commercial means oils sold to commercial accounts such as industrial plants, fleets, farm, government, etc.

Engine Oils Only: Multigrades vs Monogrades*

	Liquid Vol.	Multigrade	Monograde
	(mil. gal.)	(by percentage)	
1985	1,084	64.7%	35.3%
Retail	611	74.7%	25.3%
Commercial	374	46.1%	53.9%
1984	1,093	61.6%	38.4%
Retail	654	73.1%	26.9%
Commercial	392	41.1%	58.9%
1983	1,019	58.2%	41.8%
Retail	610	71.0%	39.0%
Commercial	371	37.6%	62.4%
1982	957	44.5%	55.5%
Retail	555	69.1%	30.9%
Commercial	352	34.6%	65.4%

*SAE J-183a only; data on factory fills and undistributed not significant in this table.
Source: National Petroleum Refiners Assn., 1985 Report on U.S. Lubricating Oil Sales, published October 1986.



Source: Federal Highway Administration

Gasoline Consumption by States

(includes on-highway and off-highway consumption)

State	1986 Rank	Total Gasoline (a) (Add 000 gal.) 1986	Total Gasoline (a) (Add 000 gal.) 1985	% Chng.	Gasohol Included (b) (Add 000 gal.) 1986	Gasohol Included (b) (Add 000 gal.) 1985
Alabama	22	2,012,114	1,881,466	6.9%	261,286	196,111
Alaska	50	256,363	267,709	(4.2)	—	—
Arizona	26	1,635,083	1,555,905	5.1	—	—
Arkansas	33	1,212,035	1,166,202	3.9	—	9,913
California	1	12,175,641	11,656,251	4.5	189,046	228,017
Colorado	27	1,592,000	1,558,918	2.1	70,463	237,553
Connecticut	28	1,443,603	1,393,470	3.6	5,323	16,409
Delaware	48	333,247	326,204	2.2	—	—
Dist. of Col.	—	163,848	163,074	0.5	127	22
Florida	4	5,622,480	5,462,027	2.9	364,667	581,364
Georgia	10	3,313,314	3,148,673	5.2	—	—
Hawaii	46	364,615	349,709	4.3	—	—
Idaho	41	469,394	463,502	1.3	22,016	21,167
Illinois	5	4,731,675	4,836,654	(2.2)	1,074,277	1,085,454
Indiana	12	3,137,416	2,559,430	22.6	667,918	696,137
Iowa	29	1,367,462	1,369,838	(0.2)	385,130	436,164
Kansas	32	1,248,753	1,234,260	1.2	232,604	281,617
Kentucky	23	1,850,343	1,736,511	6.6	736,349	556,478
Louisiana	17	2,144,874	2,132,374	0.6	330,542	123,597
Maine	38	582,048	548,083	6.2	—	—
Maryland	21	2,027,743	1,976,290	2.6	501	720
Massachusetts	16	2,458,079	2,338,603	2.9	—	—
Michigan	8	4,187,028	4,086,109	2.5	382,010	548,885
Minnesota	19	2,040,806	2,136,370	(4.5)	374,032	350,169
Mississippi	31	1,261,173	1,231,066	2.4	—	—
Missouri	14	2,762,114	2,614,237	5.7	—	18,756
Montana	42	442,230	441,744	0.1	3,454	8,079
Nebraska	36	776,830	777,136	0.0	216,356	242,367
Nevada	39	535,099	509,110	5.1	18,630	1,142
New Hampshire	40	481,789	446,902	7.8	—	—
New Jersey	9	3,524,599	3,311,078	6.4	—	—
New Mexico	35	795,661	783,404	1.6	57,419	75,502
New York	3	6,088,085	5,941,935	2.5	—	—
North Carolina	11	3,277,688	3,092,963	4.4	—	121,220
North Dakota	45	376,068	385,715	(2.5)	65,327	36,680
Ohio	6	4,655,887	4,739,030	(1.7)	814,668	691,659
Oklahoma	24	1,848,703	1,890,867	(2.2)	26,994	25,374
Oregon	30	1,291,649	1,254,669	2.9	—	168
Pennsylvania	7	4,505,701	4,429,756	1.7	—	—
Rhode Island	44	393,664	379,026	3.9	—	—
South Carolina	25	1,690,884	1,630,720	3.7	15,581	700
South Dakota	43	394,961	387,453	1.9	63,484	52,402
Tennessee	15	2,471,765	2,534,948	(2.5)	214,700	365,020
Texas	2	9,085,633	8,899,228	2.1	362,243	429,495
Utah	37	766,726	755,798	1.4	2,409	6,223
Vermont	49	259,631	252,812	2.7	—	—
Virginia	13	2,859,093	2,719,453	5.1	426,552	349,930
Washington	20	2,034,097	1,912,436	6.4	26,797	7,574
West Virginia	34	806,401	801,431	0.6	—	—
Wisconsin	18	2,061,116	2,022,990	1.9	16,312	15,069
Wyoming	47	341,098	332,978	2.4	53	281
Total U.S.		**111,796,666**	**110,296,686**	**2.7%**	**7,610,393**	**7,817,418**

(a) These totals reflect the gross gal. of gasoline reported for tax purposes by wholesale distributors in each state. The data are taken from state taxation reports. The data include highway and non-highway use, and losses.

(b) These totals show gross gal. of gasohol (ethanol blends) reported by the states. The data are obtained from state taxation reports. In states where gasohol is taxed at the same rate as gasoline, some gasohol gallonage may be commingled with gasoline data. All totals—gasoline and gasohol—are preliminary.

Source: Federal Highway Administration, Monthly Gasoline Reports, 1986.

Gasoline Octanes, U.S. Service Stations

		Regular grade [1]			Premium grade[2]			Unleaded grade		
Year	Season	Rsh.	Mtr.	(R + M)* / 2	Rsh.	Mtr.	(R + M)* / 2	Rsh.	Mtr.	(R + M)* / 2
1986	Summer	93.3	84.3	88.8	—	—	—	92.0(a) 96.7(b)	82.7(a) 86.7(b)	87.3(a) 91.7(b)
1985-86	Winter	93.0	84.5	88.8	—	—	—	91.8(a) 96.8(b)	82.8(a) 86.9(b)	87.3(a) 91.8(b)
1985	Summer	92.8	84.8	88.8	—	—	—	91.9(a) 96.5(b)	82.8(a) 86.8(b)	87.4(a) 91.7(b)
1984-85	Winter	92.8	85.2	89.1	—	—	—	91.8(a) 96.4(b)	82.9(a) 86.8(b)	87.4(a) 91.6(b)
1984	Summer	92.9	85.0	89.0	—	—	—	91.6(a) 96.5(b)	82.9(a) 86.9(b)	87.3(a) 91.7(b)
1983-84	Winter	92.7	84.9	88.8	—	—	—	91.7(a) 96.1(b)	82.9(a) 86.6(b)	87.3(a) 91.3(b)
1983	Summer	93.1	84.9	89.0	—	—	—	92.0(a) 96.2(b)	82.9(a) 86.5(b)	87.5(a) 91.4(b)
1982-83	Winter	92.9	85.2	89.1	—	—	—	91.7(a) 96.3(b)	82.9(a) 86.7(b)	87.3(a) 91.5(b)
1982	Summer	93.0	85.0	89.0	—	—	—	91.9(a) 96.8(b)	82.8(a) 86.6(b)	87.3(a) 91.7(b)
1981-82	Winter	92.7	85.1	88.9	98.1	87.8	93.0	91.8(a) 96.6(b)	82.9(a) 86.8(b)	87.4(a) 91.7(b)
1981	Summer	92.8	85.1	89.0	—	—	—	91.9(a) 96.3(b)	83.0(a) 86.2(b)	87.4(a) 91.3(b)
1980-81	Winter	92.8	85.4	89.1	97.3	89.2	93.3	91.9(a) 96.1(b)	83.3(a) 86.5(b)	87.6(a) 91.4(b)
1980	Summer	96.2	85.2	88.9	97.0	88.6	92.8	92.1(a) 96.1(b)	83.4(a) 86.4(b)	87.8(a) 91.6(b)
1979-80	Winter	92.5	85.5	89.0	97.2	89.3	93.2	92.1(a) 97.1(b)	83.7(a) 87.0(b)	87.9(a) 92.1(b)

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*Antiknock index.
(1) Below 93.0 octane; (2) 93.0 octane and above.
(a) Unleaded below 90. (b) Unleaded 90 and above.
Source: Motor Gasolines, Summer 1986—National Institute for Petroleum and Energy Research, Bartlesville, Okla., April 1987.

Gasoline Octanes, Regional Averages

	Unleaded Octane Number						Leaded Octane Number					
	Index Below 90			Index Above 90			Index Below 93			Index Above 93 (a)		
	Rsh.	Mtr.	(R + M) / 2	Rsh.	Mtr.	(R + M) / 2	Rsh.	Mtr.	(R + M) / 2	Rsh.	Mtr.	(R + M) / 2
Northeast	92.5	82.4	87.4	97.6	86.7	92.2	94.1	84.8	89.5	—	—	—
Mid-Atlantic Coast	92.4	82.7	87.6	97.3	86.9	92.1	94.1	84.4	89.3	—	—	—
Southeast	92.1	82.7	87.4	97.0	86.8	91.9	93.9	84.6	89.3	—	—	—
Appalachian	91.9	82.6	87.3	97.0	86.8	91.9	93.6	84.6	89.1	—	—	—
Michigan	92.0	82.8	87.4	96.3	87.2	91.8	93.7	84.7	89.2	—	—	—
North Illinois	91.9	82.7	87.4	96.1	86.8	91.5	93.2	85.1	89.2	—	—	—
Central Mississippi	92.2	82.7	87.5	96.5	86.5	91.5	93.4	84.8	89.1	—	—	—
Lower Mississippi	92.1	82.1	87.1	96.9	86.5	91.7	93.8	84.5	89.2	—	—	—
North Plains	91.9	83.0	87.5	96.5	86.2	92.4	93.5	84.7	89.1	—	—	—
Central Plains	91.5	83.0	87.3	96.1	86.4	91.2	92.2	84.2	88.2	—	—	—
South Plains	92.3	82.8	87.5	97.2	86.2	91.7	93.3	84.2	88.7	—	—	—
South Texas	91.8	82.6	87.2	96.4	87.2	91.8	94.0	84.5	89.3	—	—	—
South Mountain States	91.3	82.7	87.0	96.5	85.9	91.2	92.0	83.6	87.8	—	—	—
North Mountain States	90.2	82.3	86.3	95.5	87.0	91.3	91.1	86.0	87.1	—	—	—
Pacific Northwest	91.7	82.7	87.2	96.3	86.6	91.4	92.4	83.9	88.2	—	—	—
North California	93.3	83.0	88.2	97.1	86.1	91.6	94.0	84.1	89.1	—	—	—
South California	92.4	82.8	87.6	97.0	86.3	91.7	93.3	83.9	88.6	—	—	—
Average												
Summer 1986	**92.0**	**82.7**	**87.3**	**96.7**	**86.7**	**91.7**	**93.3**	**84.3**	**88.8**	—	—	—
Summer 1985	**91.9**	**82.8**	**87.4**	**96.5**	**86.8**	**91.7**	**92.8**	**84.8**	**88.8**	—	—	—

(a) In 1981, DOE began two classifications for leaded gasoline—below 93 octane and above 93 octane; however, nothing has been published in the above 93 octane category since the winter of 1981-82, except for the two samples in the winter of 1984-85 report.
Source: Motor Gasolines, Summer 1986, National Institute for Petroleum and Energy Research, Bartlesville, Okla., April 1987.

State Gasoline Consumption by Rank

State	1986 Rank	1985 Rank	(Add 000) 1986 Gallonage (a)
California	1	1	12,175,654
Texas	2	2	9,085,633
New York	3	3	6,088,086
Florida	4	4	5,662,480
Illinois	5	5	4,731,675
Ohio	6	6	4,655,887
Pennsylvania	7	7	4,505,701
Michigan	8	8	4,187,028
New Jersey	9	9	3,524,599
Georgia	10	10	3,313,314
North Carolina	11	11	3,277,688
Indiana	12	15	3,137,416
Virginia	13	12	2,859,093
Missouri	14	13	2,762,114
Tennessee	15	14	2,471,765
Massachusetts	16	16	2,458,079
Louisiana	17	17	2,144,874
Wisconsin	18	19	2,061,116
Minnesota	19	18	2,040,806
Washington	20	21	2,034,097
Maryland	21	20	2,027,743
Alabama	22	23	2,012,114
Kentucky	23	24	1,850,343
Oklahoma	24	22	1,848,703
South Carolina	25	25	1,690,880
Arizona	26	26	1,635,083
Colorado	27	27	1,592,000
Connecticut	28	28	1,443,603
Iowa	29	29	1,367,462
Oregon	30	30	1,291,649
Mississippi	31	32	1,261,173
Kansas	32	31	1,248,753
Arkansas	33	33	1,212,035
West Virginia	34	34	806,401
New Mexico	35	35	795,661
Nebraska	36	36	776,830
Utah	37	37	766,726
Maine	38	38	582,048
Nevada	39	39	535,099
New Hampshire	40	41	481,789
Idaho	41	40	469,394
Montana	42	42	442,230
South Dakota	43	43	394,961
Rhode Island	44	48	393,664
North Dakota	45	44	376,068
Hawaii	46	45	364,615
Wyoming	47	46	341,098
Delaware	48	47	333,247
Vermont	49	50	259,631
Alaska	50	49	256,363

(a) Preliminary
Source: Federal Highway Administration, Monthly Gasoline Reports, 1986.

Unleaded Sales Taking Lion's Share of Market

Impelled by the requirements of federal law and Environmental Protection Agency regulations, unleaded gasoline continues its inexorable march to total dominance of the U.S. retail market.

In 1986, unleaded gasoline sales accounted for seven out of ten gallons purchased by U.S. motorists, according to EPA. This figure is 4.6 percentage points higher than the comparable 1985 total.

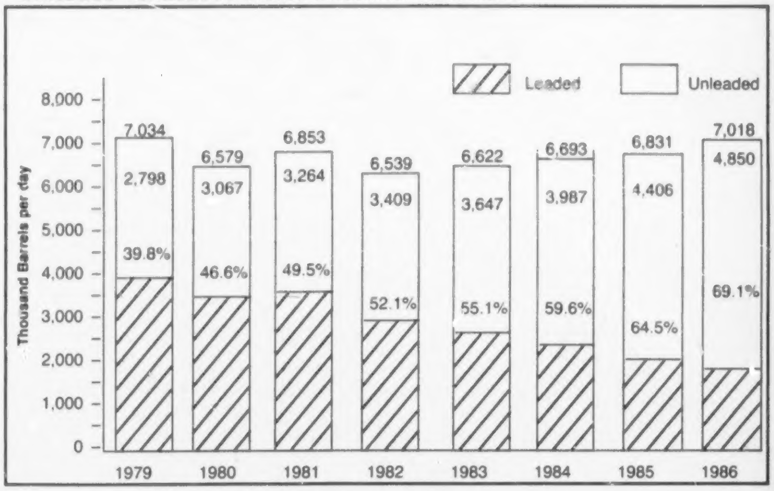
Even more significant is the pace in the growth of unleaded sales. Thus, while the overall yearly average of unleaded volume increased from 64.5% (4,406,000 b/d) in 1985 to 69.1% (4,810,000 b/d) in 1986, the percentage for unleaded was 67.9% in January 1986, 69.6% in July and a whopping 72.5% in December, or 3.4% higher than the year's average. At the current pace, this unleaded percentage will undoubtedly surpass the three quarter mark sometime during 1987.

Last year, industry observers were saying that demand for leaded gasoline would dwindle to less than 10% of the total market by 1990. At the current rate of growth in unleaded demand, that figure could be reached by 1989.

Most vehicles still using leaded gasoline fall into the declining pre-1975 model year category, a vehicle population now estimated to be less than 30% of the total U.S. car and truck fleet. The increase in unleaded gasoline sales bears a direct relationship to the vehicle scrappage rate and the corresponding later-model replacement rate.

However, in addition to pre-1975 cars, there are still a sizeable number of gasoline farm and marine engines (an estimated 10 million of the latter) designed to operate on leaded fuel. Although non-lead additives hold promise for allowing those engines to run on unleaded, EPA is now debating whether to recommend a complete lead ban by Jan. 1, 1988 or to permit lead additives for fuels used in farm and marine engines.

Unleaded vs. Leaded Motor Gasoline. 1979-1986



Source: Energy Information Administration, Petroleum Supply Monthly, February 1987

Gasohol Consumption by States—1985

The following table, prepared by the Federal Highway Administration, contains a variety of caveats, as follows: the table shows gross gallons of gasohol reported by the distributors in each state. However, this total must not be considered a national total. In states where gasohol is taxed at the same rate as gasoline, the gallonage data are not reported separately and is commingled with gasoline data. In other states, however, partial tax exemptions have been legislated but the reporting systems have not yet been converted for separate reporting. In any case, the totals should be considered minimums and not maximums.

(Add 000 gal.)

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Alabama	7,122	7,716	10,334	12,317	16,482	17,826	19,717	20,364	19,014	21,059	21,278	22,882	196,111
Alaska	—	—	—	—	—	—	—	—	—	—	—	—	—
Arizona	—	—	—	—	—	—	—	—	—	—	—	—	—
Arkansas	2,096	1,422	1,179	3,188	2,028	—	—	—	—	—	—	—	9,913
California	28,329	27,935	32,930	29,927	27,148	13,140	9,955	9,414	10,234	13,339	13,465	12,201	228,017
Colorado	24,411	19,005	22,838	23,457	27,901	22,728	12,337	14,418	11,920	19,428	19,853	19,257	237,553
Connecticut	—	—	—	852	1,854	1,918	2,213	2,269	1,947	1,988	2,055	1,313	16,409
Delaware	—	—	—	—	—	—	—	—	—	—	—	—	—
Dist. of Col.	—	—	3	2	1	7	3	3	3	—	—	—	22
Florida	49,377	49,133	53,928	55,420	57,230	52,454	50,162	49,668	38,953	39,666	39,169	46,184	581,364
Georgia	—	—	—	—	—	—	—	—	—	—	—	—	—
Hawaii	—	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	1,276	1,438	1,208	1,184	1,345	1,889	2,464	2,553	2,139	1,557	1,696	2,418	21,167
Illinois	55,415	51,086	58,428	69,877	80,773	93,773	103,324	109,819	102,419	116,782	117,363	126,395	1,085,454
Indiana	52,296	49,235	56,357	58,455	63,468	56,638	60,519	62,430	56,002	69,675	56,557	54,505	696,137
Iowa	33,602	33,877	34,117	35,947	38,884	35,886	38,902	36,503	35,745	35,420	36,985	40,296	436,164
Kansas	22,284	20,457	22,202	23,283	22,966	24,962	25,162	25,579	22,670	24,289	23,391	24,370	281,617
Kentucky	25,659	40,793	40,407	43,133	44,128	47,107	52,685	46,725	54,174	51,420	56,932	53,315	556,478
Louisiana	6,493	2,068	5,682	5,874	3,690	7,179	15,680	14,481	22,927	12,542	15,676	11,305	123,597
Maine	—	—	—	—	—	—	—	—	—	—	—	—	—
Maryland	6	5	15	70	76	64	83	75	63	59	133	71	720
Massachusetts	—	—	—	—	—	—	—	—	—	—	—	—	—
Michigan	46,481	40,979	42,723	42,394	45,807	43,781	41,184	55,454	46,578	51,595	41,359	50,550	548,885
Minnesota	2,623	3,401	3,986	8,264	10,411	14,230	33,996	45,910	46,387	48,959	68,448	63,554	350,169
Mississippi	—	—	—	—	—	—	—	—	—	—	—	—	—
Missouri	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	18,756
Montana	615	1,107	1,022	946	678	780	443	713	548	276	577	374	8,079
Nebraska	18,261	17,413	19,710	19,926	22,235	22,160	20,388	21,392	19,848	20,254	20,420	20,340	242,387
Nevada	—	—	—	—	140	154	113	185	26	173	157	194	1,142
New Hampshire	—	—	—	—	—	—	—	—	—	—	—	—	—
New Jersey	—	—	—	—	—	—	—	—	—	—	—	—	—
New Mexico	6,627	6,198	6,927	6,430	7,407	7,450	6,937	6,042	5,496	5,781	5,076	5,131	75,502
New York	—	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	12,911	14,872	16,408	26,210	22,680	26,435	1,704	—	—	—	—	—	121,220
North Dakota	780	1,565	773	947	685	2,406	2,834	2,201	6,309	1,854	9,533	6,793	36,680
Ohio	46,883	42,352	51,728	53,612	57,262	58,681	64,001	64,591	57,784	63,906	63,071	67,788	691,659
Oklahoma	1,343	1,577	1,413	1,706	910	912	1,858	1,669	2,492	5,417	4,220	1,857	25,374
Oregon	23	—	22	22	23	78	—	—	—	—	—	—	168
Pennsylvania	—	—	—	—	—	—	—	—	—	—	—	—	—
Rhode Island	—	—	—	—	—	—	—	—	—	—	—	—	—
South Carolina	18	6	12	16	15	—	—	—	43	—	534	56	700
South Dakota	3,334	2,902	3,406	3,813	4,332	4,487	5,016	5,287	4,540	5,585	4,593	5,107	52,402
Tennessee	26,013	23,889	28,942	27,802	26,561	26,994	36,475	25,461	27,093	22,284	58,309	35,197	365,020
Texas	34,081	34,940	38,707	40,572	44,045	42,587	34,846	35,780	32,031	29,895	30,241	31,770	429,495
Utah	506	393	596	364	505	433	623	549	530	629	496	599	6,223
Vermont	—	—	—	—	—	—	—	—	—	—	—	—	—
Virginia	12,568	14,687	19,998	24,248	25,757	32,667	30,619	37,249	33,999	37,854	37,913	42,371	349,930
Washington	742	608	783	525	1,270	263	628	649	567	567	658	314	7,574
West Virginia	—	—	—	—	—	—	—	—	—	—	—	—	—
Wisconsin	325	296	313	970	1,315	1,233	1,367	2,583	1,048	1,692	1,629	2,298	15,069
Wyoming	23	21	18	20	22	76	30	14	17	13	12	15	281
U.S. Total	**524,106**	**512,939**	**578,678**	**623,336**	**661,599**	**662,941**	**677,851**	**701,593**	**665,109**	**705,521**	**753,362**	**750,383**	**7,817,418**
Puerto Rico	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	**524,106**	**512,939**	**578,678**	**623,336**	**661,599**	**662,941**	**677,851**	**701,593**	**665,109**	**705,521**	**753,362**	**750,383**	**7,817,418**

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[1] This table shows gross gallons of gasohol (ethanol blends) reported by the states. The data are obtained from state taxation reports. In states where gasohol is taxed at the same rate as gasoline, some gasohol gallonage may be commingled with gasoline data.

Source: Federal Highway Administration, Monthly Gasoline Reports, 1986.

Gasohol Consumption by States—1986

This table, prepared by Federal Highway Administration, shows gross gallons of gasohol (ethanol blends) reported by the various states. The data are obtained from state taxation reports. In states where gasohol is taxed at the same rate as gasoline, some gasohol gallonage may be commingled with gasoline data. At any rate, this is a preliminary report and upward revisions may be expected on the basis of later data. This report indicates there was a 3% decrease in gasohol use in 1986.

(Add 000 gal.)

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Alabama	21,252	13,109	18,172	21,528	22,993	22,769	23,596	22,403	20,894	22,015	23,207	29,348	261,286
Alaska	—	—	—	—	—	—	—	—	—	—	—	—	—
Arizona	—	—	—	—	—	—	—	—	—	—	—	—	—
Arkansas	—	—	—	—	—	—	—	—	—	—	—	—	—
California	11,920	8,884	9,751	9,731	11,085	12,434	17,819	20,507	19,736	22,015	21,320	23,844	189,046
Colorado	15,319	11,229	11,910	9,526	8,433	5,616	3,116	1,301	1,474	2,398	—	141	70,463
Connecticut	1,711	1,623	1,339	213	437	—	—	—	—	—	—	—	5,323
Delaware	—	—	—	—	—	—	—	—	—	—	—	—	—
Dist. of Col.	8	2	20	26	22	15	20	11	3	—	—	—	127
Florida	41,448	38,806	39,646	33,984	32,426	28,936	26,552	25,977	20,487	15,627	30,389	30,389	364,667
Georgia	—	—	—	—	—	—	—	—	—	—	—	—	—
Hawaii	—	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	2,281	2,565	2,214	2,026	2,658	2,831	4,779	446	358	384	680	794	22,016
Illinois	115,717	103,239	112,346	107,263	111,632	104,188	100,346	106,314	100,706	104,404	106,616	106,616	1,074,277
Indiana	55,960	50,264	53,372	56,323	62,065	58,065	53,160	59,775	53,900	59,312	59,229	56,493	677,918
Iowa	31,959	32,546	36,357	34,488	34,620	30,224	31,020	32,948	27,644	31,342	27,849	34,133	385,130
Kansas	22,178	20,021	23,390	21,666	20,919	18,832	19,901	20,099	17,429	17,657	15,130	15,382	232,604
Kentucky	57,067	53,615	46,369	60,682	62,150	62,473	82,510	41,582	75,651	65,700	64,960	63,590	736,349
Louisiana	19,507	17,881	22,798	21,690	23,064	21,893	25,621	34,725	48,893	34,297	30,051	30,122	330,542
Maine	—	—	—	—	—	—	—	—	—	—	—	—	—
Maryland	416	83	1	—	—	—	—	—	1	—	—	—	501
Massachusetts	—	—	—	—	—	—	—	—	—	—	—	—	—
Michigan	26,461	25,283	27,879	31,844	32,857	34,342	35,476	31,638	31,631	34,614	33,734	36,251	382,010
Minnesota	55,051	48,226	43,120	35,259	36,707	29,261	26,572	21,676	18,902	18,063	20,906	20,289	374,032
Mississippi	—	—	—	—	—	—	—	—	—	—	—	—	—
Missouri	—	—	—	—	—	—	—	—	—	—	—	—	—
Montana	349	118	174	323	233	99	178	81	663	439	419	378	3,454
Nebraska	18,634	16,508	20,443	19,892	19,160	18,427	17,264	16,625	15,489	18,257	14,927	20,730	216,356
Nevada	206	219	203	240	406	378	374	2,838	2,842	2,529	3,561	4,854	18,650
New Hampshire	—	—	—	—	—	—	—	—	—	—	—	—	—
New Jersey	—	—	—	—	—	—	—	—	—	—	—	—	—
New Mexico	3,926	4,498	7,344	7,190	4,037	3,209	3,601	3,872	4,094	5,380	5,483	4,785	57,419
New York	—	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	3,309	4,853	5,029	5,231	5,761	9,023	3,835	4,743	8,317	1,634	7,789	5,803	65,327
Ohio	63,478	57,834	58,329	70,500	70,487	64,086	75,023	65,995	66,530	74,164	69,321	78,922	814,668
Oklahoma	1,962	1,532	8,818	268	14,414	—	—	—	—	—	—	—	26,994
Oregon	—	—	—	—	—	—	—	—	—	—	—	—	—
Pennsylvania	—	—	—	—	—	—	—	—	—	—	—	—	—
Rhode Island	—	—	—	—	—	—	—	—	—	—	—	—	—
South Carolina	220	39	627	488	332	1	746	319	8,435	2,769	307	1,298	15,581
South Dakota	4,536	4,466	5,428	5,360	6,217	5,463	6,331	5,351	4,653	5,294	4,666	5,719	63,484
Tennessee	16,488	19,003	16,483	8,547	24,489	4,462	15,091	15,744	14,637	18,469	38,258	23,029	214,700
Texas	30,097	22,132	25,031	24,386	30,947	28,308	32,413	26,830	30,390	33,829	36,445	41,435	362,243
Utah	715	367	485	518	257	6	—	—	—	—	22	39	2,409
Vermont	—	—	—	—	—	—	—	—	—	—	—	—	—
Virginia	40,690	37,946	44,174	42,846	44,174	42,491	35,029	30,889	24,876	28,001	26,400	29,036	426,552
Washington	584	613	1,066	240	313	2,372	2,637	671	6,874	1,001	6,857	3,569	26,797
West Virginia	—	—	—	—	—	—	—	—	—	—	—	—	—
Wisconsin	1,661	1,437	1,172	1,545	1,895	1,757	1,365	1,403	1,116	803	499	659	15,312
Wyoming	11	9	3	2	3	3	4	3	3	4	4	4	53
U.S. Total	**665,121**	**598,950**	**643,493**	**633,825**	**685,193**	**611,964**	**644,379**	**594,766**	**626,628**	**620,434**	**649,029**	**667,652**	**7,610,393**

Source: Federal Highway Administration, Monthly Gasoline Reports.

Highway Diesel Sales by States 1985

Diesel sales for motor vehicles—passenger cars and trucks—rose 2.9% in 1985, continuing the upswing of recent years. On-highway use amounted to 17.3-billion gal., compared with 16.8-billion gal. in 1984.

Off-highway sales—primarily for construction equipment and farms—slipped 3.4% in 1985, from 1.7-billion gal. to 1.6-billion gal.

(Add 000 gal.)

	On-Highway			Off-Highway		
	1985	1984	% Change	1985	1984	% Change
PAD District 1						
New England States						
Connecticut	183,728	183,583	—	6,632	5,542	19.7%
Maine	126,975	116,662	8.8	5,960	5,732	4.0
Massachusetts	245,057	252,545	(3.0)	9,511	13,854	(31.3)
New Hampshire	42,239	40,593	4.1	7,380	4,775	54.6
Rhode Island	11,775	32,809	(64.1)	2,535	4,049	(37.4)
Vermont	38,737	36,274	6.8	3,461	3,180	8.8
Central Atlantic States						
Delaware	50,528	46,602	8.4	2,164	3,324	(34.9)
District of Columbia	20,997	21,393	(1.9)	558	435	28.3
Maryland	238,103	208,168	14.4	38,637	23,629	63.5
New Jersey	445,512	436,162	2.1	25,412	20,714	22.7
New York	518,586	439,452	18.0	43,487	44,514	(2.3)
Pennsylvania	769,798	734,690	4.8	45,147	67,066	(32.7)
Lower Atlantic States						
Florida	706,762	664,162	6.4	69,020	50,191	37.5
Georgia	664,749	633,818	9.1	41,087	29,836	37.7
North Carolina	512,560	501,663	2.2	24,302	21,231	14.0
South Carolina	293,068	291,490	0.5	15,312	13,990	9.4
Virginia	437,519	408,060	7.2	26,835	36,175	(25.8)
West Virginia	121,288	123,877	(2.1)	20,517	28,228	(27.3)
Total	**5,426,879**	**5,172,003**	**4.9**	**387,956**	**376,637**	**3.0**
PAD District 2						
Illinois	586,969	574,188	2.2	27,655	57,274	(51.7)
Indiana	693,369	692,209	0.2	8,876	21,140	(58.0)
Iowa	298,367	313,635	(4.9)	15,152	13,427	12.8
Kansas	260,522	252,239	3.3	20,397	13,639	49.5
Kentucky	329,045	335,968	(2.1)	19,483	60,273	(67.6)
Michigan	454,673	425,802	6.8	33,974	26,172	29.8
Minnesota	289,062	284,668	1.5	26,285	17,616	49.2
Missouri	448,082	438,179	2.3	30,113	22,600	33.2
Nebraska	186,417	181,963	2.4	20,026	13,540	47.9
North Dakota	93,017	90,792	2.5	5,793	6,356	(8.9)
Ohio	831,466	810,585	2.6	80,807	34,486	134.3
Oklahoma	387,890	401,738	(3.4)	48,099	51,427	(6.5)
South Dakota	95,079	95,895	(0.8)	3,428	4,074	(15.9)
Tennessee	513,316	503,273	2.0	38,501	27,822	38.4
Wisconsin	349,753	342,908	2.0	14,810	18,333	(19.2)
Total	**5,817,027**	**5,744,012**	**1.3**	**393,399**	**390,178**	**0.8**
PAD District 3						
Alabama	357,890	345,705	3.5	45,515	58,889	(22.7)
Arkansas	288,154	285,945	0.8	30,214	27,794	8.7
Louisiana	325,752	362,139	(10.0)	61,288	80,101	(23.5)
Mississippi	280,338	268,572	4.4	49,583	58,427	(15.1)
New Mexico	177,728	168,017	5.8	32,383	22,615	43.2
Texas	1,550,477	1,514,092	2.4	97,525	233,404	(58.2)
Total	**2,980,429**	**2,944,470**	**1.2**	**316,507**	**481,230**	**(34.2)**
PAD District 4						
Colorado	199,169	202,150	(1.5)	26,065	37,327	(30.2)
Idaho	97,057	93,509	3.8	8,268	10,191	(18.9)
Montana	106,862	113,853	(6.1)	129,801	13,829	925.4
Utah	132,393	130,617	1.4	8,415	17,630	(52.3)
Wyoming	115,572	104,249	10.9	25,230	46,263	(45.5)
Total	**651,053**	**644,738**	**1.0**	**197,779**	**125,240**	**57.9**
PAD District 5						
Alaska	106,978	98,646	8.4	32,836	8,786	273.7
Arizona	267,552	228,929	16.9	23,053	28,642	(19.5)
California	1,387,378	1,399,258	(0.8)	173,877	151,731	14.6
Hawaii	18,589	17,548	5.9	2,527	2,440	3.6
Nevada	92,782	77,184	20.2	18,174	38,103	(52.3)
Oregon	243,977	199,543	21.9	33,971	25,786	31.7
Washington	287,005	275,452	4.2	36,607	45,089	(18.8)
Total	**2,404,262**	**2,292,560**	**4.9**	**321,045**	**300,577**	**6.8**
U.S. Total	**17,279,650**	**16,797,423**	**2.9**	**1,616,685**	**1,673,951**	**(3.4)**

Source: Energy Information Administration, Petroleum Marketing Monthly, July, 1986, and *NPN Factbook* 1985 for 1984 data.

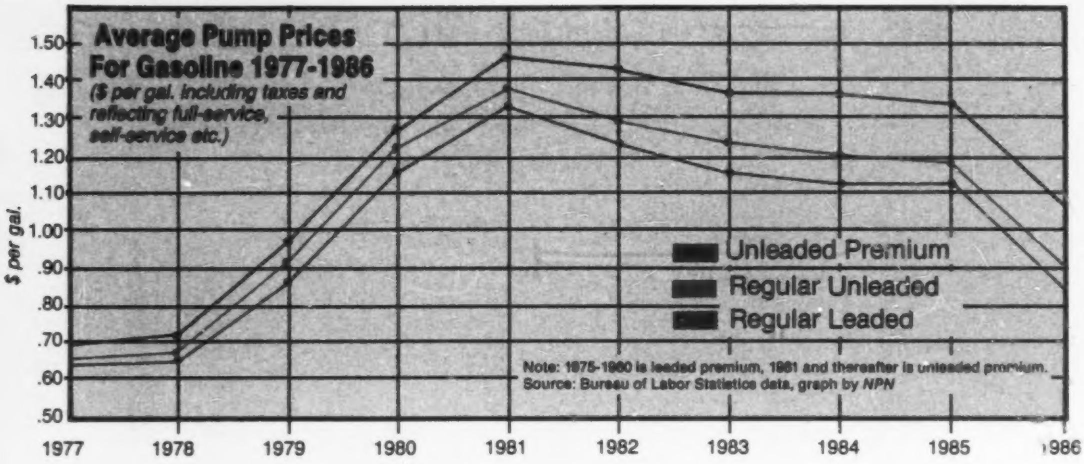
Diesel Fuel Consumption by States—1986

The table below, prepared by the Federal Highway Administration, shows gross gal. of special fuels, but this is primarily diesel fuel. Included are small amounts of liquefied petroleum gas. In most cases, FHA says, the data reflect retail sales, although few states tax special fuels at the wholesale level. This is a preliminary report for 1986 and includes some estimates.

(Add 000 gal.)

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Alabama	36,026	28,148	27,683	42,473	24,723	28,419	40,722	26,325	27,078	36,886	32,468	24,568	375,521
Alaska	5,435	17,316	10,334	12,785	4,165	901	6,104	20,051	6,856	17,995	6,104	6,641	99,173
Arizona	22,370	19,136	23,617	20,167	23,321	25,419	28,688	19,503	29,431	21,698	23,440	19,452	276,242
Arkansas	22,719	23,323	26,514	25,522	23,203	28,117	25,485	26,055	28,126	9,163	41,533	22,686	302,446
California	123,181	123,181	123,181	126,913	126,913	126,913	140,020	140,020	140,020	144,106	144,106	144,106	1,602,660
Colorado	10,896	17,094	17,791	14,635	15,841	19,907	15,065	15,530	18,513	11,547	17,636	16,278	190,733
Connecticut	14,396	12,257	15,807	16,651	15,843	14,758	15,450	16,756	15,881	17,167	12,821	15,101	182,888
Delaware	5,636	4,489	3,062	5,133	4,983	2,994	4,699	4,869	3,039	5,691	4,652	4,685	53,934
Dist. of Col.	1,891	1,719	1,763	1,828	1,942	1,851	1,966	1,931	1,807	2,000	1,700	1,756	22,154
Florida	64,885	62,165	66,154	65,963	64,652	59,403	58,256	58,514	58,366	66,070	62,443	62,443	749,314
Georgia	63,404	54,439	54,478	68,707	63,104	57,211	63,670	59,071	63,400	61,628	56,855	58,322	724,289
Hawaii	1,514	1,460	1,567	1,807	1,602	2,374	1,335	1,653	1,347	2,077	1,665	2,121	20,542
Idaho	11,687	12,649	1,158	10,618	11,040	1,227	13,619	10,589	920	13,897	11,730	869	100,003
Illinois	60,968	49,165	50,504	53,522	59,045	60,656	68,630	60,337	63,726	67,793	59,415	62,339	716,100
Indiana	60,263	50,959	58,891	62,423	58,175	83,542	33,743	90,925	29,325	57,061	64,519	45,493	695,319
Iowa	18,043	21,108	25,990	23,780	19,373	31,691	20,618	21,926	32,746	26,671	20,858	30,166	292,970
Kansas	18,405	21,419	20,359	24,658	25,630	23,952	26,469	17,838	26,553	11,316	23,993	18,057	258,669
Kentucky	30,721	26,381	31,065	29,335	30,114	31,516	25,870	31,292	27,262	29,861	42,377	33,773	369,587
Louisiana	38,599	29,748	24,676	30,023	22,916	34,538	27,667	24,074	31,164	32,985	32,735	24,450	353,575
Maine	11,331	11,833	9,546	10,221	13,723	9,875	11,964	13,440	10,747	13,195	12,323	14,958	143,176
Maryland	21,300	20,153	24,909	22,663	23,598	25,179	25,685	20,973	23,716	26,464	20,051	25,916	280,607
Massachusetts	19,024	19,892	21,705	23,371	20,528	23,040	22,868	21,965	25,517	23,601	19,833	27,063	268,407
Michigan	36,211	28,928	38,616	51,319	33,497	47,497	36,121	33,541	53,961	36,767	30,394	58,648	485,500
Minnesota	19,855	20,691	25,572	22,973	23,651	26,444	24,377	25,480	28,275	24,197	27,711	25,048	294,274
Mississippi	26,518	19,241	24,206	31,344	20,500	23,875	29,482	22,217	30,074	27,095	22,142	23,988	300,682
Missouri	36,145	32,219	39,154	49,725	26,881	41,618	47,758	32,961	49,552	45,461	35,100	45,796	482,368
Montana	10,890	5,569	7,729	10,459	6,636	9,446	11,325	6,505	10,422	11,715	7,060	9,436	107,192
Nebraska	12,756	14,961	17,529	13,826	17,398	17,850	13,763	17,683	18,049	15,284	16,517	17,127	192,745
Nevada	2,192	19,257	1,056	4,908	16,619	2,078	9,738	15,284	1,236	3,174	22,528	1,083	99,153
New Hampshire	6,668	833	3,815	4,976	2,734	5,069	4,986	2,419	5,449	5,350	3,302	6,333	51,934
New Jersey	38,014	39,402	34,132	41,081	37,474	38,760	37,777	34,644	38,452	38,153	35,371	40,089	453,349
New Mexico	41,162	6,111	1,246	36,643	8,279	940	32,158	12,953	1,200	29,014	16,975	—	203,706
New York	38,691	37,989	38,876	37,570	42,791	40,673	37,916	42,398	39,495	43,020	39,706	39,223	478,348
North Carolina	29,469	49,551	56,171	39,943	46,431	57,662	37,118	44,787	56,096	16,152	74,503	52,219	560,102
North Dakota	4,457	3,479	6,024	8,630	6,032	12,527	7,327	5,160	14,323	2,651	13,050	6,515	90,175
Ohio	67,418	60,842	64,011	72,082	66,424	62,792	64,552	73,654	73,130	73,771	71,665	63,635	813,964
Oklahoma	28,012	30,283	36,163	32,368	28,201	36,575	29,022	27,903	35,303	25,735	26,033	36,922	372,520
Oregon	—	—	—	—	—	—	—	—	—	—	—	—	—
Pennsylvania	67,197	61,507	67,532	70,808	69,744	69,308	69,074	69,592	71,114	76,170	61,412	63,793	817,251
Rhode Island	2,826	2,826	2,826	2,879	2,879	2,879	4,495	4,495	4,495	4,993	4,993	4,993	45,579
South Carolina	23,889	19,820	32,029	27,064	27,481	32,536	23,333	22,767	36,253	32,413	21,947	27,230	326,762
South Dakota	7,790	7,205	7,458	7,171	7,895	7,681	8,038	8,015	7,489	7,876	7,633	9,266	93,517
Tennessee	42,733	29,618	51,700	41,957	39,638	52,299	36,714	44,939	55,401	47,252	34,385	53,810	530,446
Texas	124,135	123,650	137,734	126,312	118,038	84,201	134,795	128,189	119,001	132,048	116,726	121,693	1,466,522
Utah	17,172	10,793	4,674	5,005	21,891	11,927	5,603	22,823	6,316	7,681	20,564	7,864	142,313
Vermont	2,415	5,323	2,314	2,854	4,890	2,849	1,673	6,676	2,776	1,920	6,905	427	41,022
Virginia	35,887	37,314	36,653	42,178	36,653	49,627	39,788	40,541	39,948	44,469	37,835	37,278	478,171
Washington	16,610	26,152	29,966	28,739	44,322	35,086	25,083	18,985	39,517	18,994	33,221	22,433	339,108
West Virginia	9,738	10,454	10,833	12,936	11,282	6,681	11,831	10,351	12,528	17,793	9,100	11,811	135,338
Wisconsin	28,257	24,140	36,376	25,761	28,601	37,055	26,448	29,788	38,891	29,746	29,003	37,419	371,485
Wyoming	11,043	8,615	10,467	8,911	10,630	12,133	11,965	12,819	11,951	5,551	10,431	10,431	125,166
U.S. Total	**1,450,850**	**1,364,807**	**1,465,636**	**1,553,620**	**1,462,126**	**1,519,749**	**1,500,891**	**1,521,206**	**1,552,545**	**1,523,317**	**1,549,529**	**1,512,736**	**17,901,004**
Puerto Rico	6,887	6,235	5,988	7,206	5,059	4,569	4,595	4,797	5,422	4,843	3,790	4,429	43,820
Grand Total	**1,457,737**	**1,371,042**	**1,471,624**	**1,560,826**	**1,467,185**	**1,524,318**	**1,505,486**	**1,526,003**	**1,557,967**	**1,528,160**	**1,553,319**	**1,521,165**	**18,034,824**

Source: Federal Highway Administration, Monthly Gasoline Reports, 1986.



Note: 1975-1980 is leaded premium, 1981 and thereafter is unleaded premium.
Source: Bureau of Labor Statistics data, graph by *NPN*

Gasoline Prices by Grades and Months

(U.S. averages, retail, in ¢ per gal. including taxes and types of service.)

		Leaded Regular	Unleaded Regular	Unleaded Premium (a)	Average for All Types
1986	January	110.7	119.4	133.6	119.0
	February	103.4	112.0	128.2	111.9
	March	89.4	98.1	116.0	98.3
	April	81.5	88.8	106.1	89.5
	May	85.2	92.3	107.5	92.7
	June	88.5	95.5	110.0	95.8
	July	82.2	89.0	104.5	89.5
	August	77.8	84.3	99.9	84.8
	September	79.7	86.0	101.0	86.4
	October	77.1	83.1	98.7	83.7
	November	76.2	82.1	98.0	82.7
	December	76.4	82.3	98.4	83.0
	Average	**85.7**	**92.7**	**108.5**	**93.1**
1985	January	106.0	114.8	130.4	114.5
	February	104.1	113.1	129.0	112.8
	March	107.1	115.9	131.0	115.5
	April	111.9	120.5	134.0	119.9
	May	114.4	123.1	136.0	122.3
	June	115.3	124.1	137.1	123.3
	July	115.4	124.2	136.7	123.3
	August	114.3	122.9	135.9	122.2
	September	112.9	121.6	134.9	120.9
	October	111.7	120.4	134.2	119.8
	November	112.3	120.7	133.9	120.1
	December	112.3	120.8	134.4	120.3
	Average	**111.5**	**120.2**	**134.0**	**119.6**
1984	January	113.1	121.6	136.9	120.0
	February	112.5	120.9	136.1	119.3
	March	112.5	121.0	136.2	119.4
	April	114.5	122.7	137.5	121.1
	May	115.4	123.6	138.0	122.1
	June	114.7	122.9	137.7	121.4
	July	112.9	121.2	137.0	119.7
	August	111.6	119.6	135.5	118.4
	September	112.0	120.3	136.0	118.9
	October	112.7	120.9	136.5	119.5
	November	112.4	120.7	136.4	119.3
	December	110.9	119.3	135.4	117.9
	Average	**112.9**	**121.2**	**136.5**	**119.8**
Average	1983	115.7	124.1	138.3 (a)	122.5
	1982	122.2	129.6	141.5 (a)	128.1
	1981 (b)	131.1	137.8	141.5 (a)	128.1
	1980	119.1	124.5	128.1 (a)	122.1
	1979	85.7	90.3	92.2 (a)	88.2
	1978	62.6	67.0	69.4 (a)	65.2
	1977	62.2	65.6	67.4 (a)	NA
	1976	59.0	61.4	63.6 (a)	NA

(a) In January 1984, this series was switched from leaded premium to unleaded premium to reflect changing market conditions.
(b) Data for 1981 and earlier are for leaded premium. Beginning in September 1981, Bureau of Labor Statistics changed the weights used in the calculation of average motor gasoline prices. In the fourth column above, gasohol is included and unleaded premium is weighted more heavily.
Source: Department of Energy, Monthly Energy Review, December 1987.

Retail Gasoline Prices by Months and Grades

(In $ per gal., including appropriate federal, state and local taxes, and representative of full-service, self-service and mini-service pumps and stations. Although single-city identifications are used in the table below, each is actually a Standard Metropolitan Statistical Area or a Standard Consolidated Area as defined by the Office of Management and Budget and normally used by the Bureau of Labor Statistics, Census Bureau, etc.)

Gasoline—All Types*

Standard Metropolitan Statistical Areas**	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average For Year
U.S. City Average	$1.190	$1.119	$0.983	$0.895	$0.927	$0.958	$0.895	$0.848	$0.864	$0.837	$0.827	$0.830	$0.931
GROUP A-1 and A-2 (POPULATION 1,250,000 AND UP)													
Chicago, N'Western Ind.	1.266	1.160	1.013	.908	.970	1.027	.934	.877	.902	.869	.895	.918	.978
Detroit	1.255	1.095	.904	.837	.945	.961	.876	.861	.851	.816	.849	.833	.923
L.A.-Long Beach-Anaheim	1.173	1.109	1.025	1.002	1.031	1.041	.952	.888	.896	.851	.822	.814	.967
N.Y.-N'Eastern N.J.	1.242	1.198	1.067	.911	.907	.949	.902	.862	.864	.856	.843	.852	.954
Philadelphia	1.197	1.146	1.001	.833	.879	.927	.871	.819	.835	.820	.808	.809	.913
GROUP B (POPULATION 385,000 to 1,250,000)													
Anchorage, Alas.	1.191	1.189	1.159	1.019	.960	.933	.919	.917	.922	.925	.890	.897	.993
Baltimore, Md.	1.202	1.163	1.068	.947	.924	.943	.913	.875	.876	.856	.838	.842	.954
Boston, Mass.	1.214	1.181	1.064	.924	.905	.943	.913	.829	.845	.841	.843	.844	.946
Cincinnati, Ohio-Ky.-Ind.	1.141	1.043	.851	.798	.907	.905	.807	.788	.811	.767	.785	.810	.868
Denver-Boulder, Colo.	1.050	.923	.762	.800	.805	.870	.821	.805	.859	.823	.817	.802	.845
Miami, Fla.	1.237	1.195	1.066	.936	.923	.947	.909	.889	.908	.896	.891	.898	.975
Milwaukee, Wis.	1.165	1.041	.871	.822	.930	.976	.833	.812	.858	.813	.818	.836	.898
N'Eastern Penna.	1.224	1.137	.944	.852	.910	.945	.853	.807	.834	.832	.829	.831	.917
Portland, Ore.-Wash.	1.143	1.114	.963	.853	.870	.902	.900	.853	.854	.820	.778	.772	.902
St. Louis, Mo.-Ill.	1.134	1.045	.919	.841	.877	.911	.840	.785	.800	.778	.784	.794	.876
San Diego, Calif.	1.202	1.140	1.042	1.023	1.055	1.068	.970	.893	.918	.874	.833	.838	.986
Seattle-Everett, Wash.	1.192	1.171	1.035	.906	.938	.961	.954	.907	.913	.880	.822	.814	.958
Washington, D.C.-Md.-Va.	1.261	1.218	1.118	1.004	.991	1.009	.979	.954	.952	.939	.917	.922	1.022
GROUP C (POPULATION 75,000 to 385,000)													
Atlanta, Ga.	1.172	1.097	.935	.828	.865	.888	.839	.798	.795	.770	.767	.768	.877
Buffalo, N.Y.	1.220	1.136	.989	.873	.881	.935	.828	.772	.812	.786	.778	.784	.899
Cleveland, Ohio	1.203	1.102	.941	.867	.952	.959	.877	.834	.862	.814	.830	.857	.925
Dallas-Fort Worth, Tex.	1.117	1.081	.958	.803	.798	.830	.807	.752	.747	.731	.712	.718	.836
Honolulu, Hawaii	1.405	1.403	1.315	1.220	1.202	1.212	1.192	1.127	1.133	1.106	1.084	1.075	1.206
Houston, Tex.	1.105	1.051	.896	.776	.775	.828	.776	.729	.747	.736	.726	.730	.821
Kansas City, Mo.-Kan.	1.068	.921	.776	.758	.834	.892	.769	.717	.773	.716	.733	.735	.801
Minneapolis-St. Paul, Minn.-Wis.	1.207	1.107	.951	.864	.945	.993	.935	.875	.927	.882	.861	.851	.952
Pittsburgh, Pa.	1.205	1.146	.982	.840	.877	.925	.842	.776	.813	.787	.787	.791	.898
San Francisco-Oakland, Calif.	1.221	1.181	1.038	.963	1.006	1.020	.941	.889	.898	.856	.638	.840	.974

Gasoline-Leaded Regular*

Standard Metropolitan Statistical Area**	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average For Year
U.S. City Average	$1.107	$1.034	$0.894	$0.815	$0.852	$0.885	$0.822	$0.778	$0.797	$0.771	$0.762	$0.764	$0.857
GROUP A-1 and A-2 (POPULATION 1,250,000 AND UP)													
Chicago-N'Western Ind.	1.187	1.065	.923	.831	.904	.963	.876	.830	.851	.809	.841	.860	.911
Detroit	1.172	.994	.806	.746	.864	.881	.787	.777	.762	.714	.750	.742	.833
L.A.-Long Beach-Anaheim	1.067	.997	.905	.910	.932	.944	.855	.806	.820	.782	.768	.765	.829
N.Y.-N'Eastern N.J.	1.145	1.099	.968	.818	.813	.857	.810	.761	.765	.762	.755	.759	.859
Philadelphia	1.142	1.095	.954	.797	.844	.890	.827	.781	.790	.778	.766	.768	.869
GROUP B (POPULATION 385,000 to 1,250,000)													
Anchorage, Alas.	1.151	1.148	1.116	.981	.918	.890	.876	.873	.877	.877	.845	.851	.950
Baltimore, Md.	1.124	1.083	.989	.865	.846	.872	.843	.798	.800	.783	.760	.766	.878
Boston, Mass.	1.114	1.064	.968	.833	.823	.862	.823	.742	.758	.756	.763	.762	.858
Cincinnati, Ohio-Ky.-Ind.	1.076	.979	.795	.740	.853	.854	.758	.729	.757	.718	.732	.754	.813
Denver-Boulder, Colo.	.990	.869	.710	.748	.752	.812	.764	.745	.798	.765	.755	.746	.788
Miami, Fla.	1.144	1.113	.986	.844	.831	.863	.833	.814	.831	.818	.828	.835	.895
Milwaukee, Wis.	1.112	.996	.830	.783	.883	.934	.797	.767	.818	.761	.783	.800	.857
N'Eastern Penna.	1.159	1.077	.900	.813	.864	.904	.806	.761	.789	.768	.784	.785	.869
Portland, Ore.-Wash.	1.064	1.034	.892	.781	.805	.839	.837	.792	.797	.768	.730	.728	.839
St. Louis, Mo.-Ill.	1.059	.962	.827	.754	.799	.843	.766	.710	.720	.699	.706	.721	.800
San Diego, Calif.	1.084	1.027	.924	.902	.942	.953	.848	.778	.812	.767	.734	.744	.877
Seattle-Everett, Wash.	1.132	1.089	.952	.812	.865	.888	.884	.884	.855	.824	.771	.772	.890
Washington, D.C.-Md.-Va.	1.132	1.086	.989	.877	.857	.879	.851	.821	.821	.802	.783	.736	.891
GROUP C (POPULATION 75,000 to 385,000)													
Atlanta, Ga.	1.071	.988	.806	.717	.756	.779	.785	.687	.692	.666	.667	.667	.768
Buffalo, N.Y.	1.170	1.090	.948	.834	.844	.899	.790	.734	.777	.754	.741	.748	.861
Cleveland, Ohio	1.096	.985	.820	.749	.851	.862	.773	.736	.763	.714	.732	.764	.821
Dallas-Fort Worth, Tex.	1.059	1.020	.898	.741	.756	.782	.763	.710	.704	.685	.670	.674	.788
Honolulu, Hawaii	1.291	1.280	1.186	1.085	1.057	1.063	1.047	.985	1.001	.990	.973	.961	1.080
Houston, Tex.	1.032	.977	.818	.695	.712	.760	.708	.664	.679	.668	.659	.664	.753
Kansas City, Mo.-Kan.	1.001	.864	.722	.709	.792	.846	.717	.674	.723	.673	.687	.689	.758
Minneapolis-St Paul, Minn.-Wis.	1.155	1.052	.900	.836	.896	.946	.889	.828	.878	.833	.810	.804	.903
Pittsburgh, Pa.	1.148	1.099	.927	.796	.835	.880	.799	.738	.779	.754	.750	.757	.855
San Francisco-Oakland, Calif.	1.111	1.068	.924	.839	.888	.903	.829	.780	.805	.711	.752	.759	.869

(*) In $/gal., including federal, state and local taxes and reflecting full-service, self-service and mini-service marketing; (**) As defined and used by Census Bureau and federal agencies for market comparisons.

Source: Bureau of Labor Statistics, Department of Commerce.

in Selected Areas—1986*

Gasoline-Unleaded Regular*

Standard Metropolitan Statistical Area**	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average For Year
U.S. City Average	$1.194	$1.120	$0.981	$0.888	$0.923	$0.955	$0.890	$0.843	$0.860	$0.831	$0.821	$0.823	$0.928
GROUP A-1 and A-2 (POPULATION 1,250,000 AND UP)													
Chicago-N'Western Ind.	1.257	1.149	.994	.881	.943	1.003	.904	.842	.871	.842	.865	.889	.953
Detroit	1.271	1.121	.925	.854	.963	.979	.898	.877	.872	.841	.874	.855	.944
L.A.-Long Beach-Anaheim	1.175	1.105	1.022	.981	1.015	1.024	.936	.879	.887	.839	.812	.802	.957
N.Y.-N'Eastern N.J.	1.205	1.157	1.022	.864	.860	.905	.856	.813	.815	.806	.794	.802	.908
Philadelphia	1.176	1.124	.971	.794	.844	.893	.841	.785	.803	.784	.772	.773	.880
GROUP B (POPULATION 385,000 to 1,250,000)													
Anchorage, Alas.	1.198	1.196	1.167	1.021	.961	.934	.919	.917	.923	.929	.894	.902	.997
Baltimore, Md.	1.179	1.135	1.034	.910	.889	.909	.877	.838	.842	.823	.804	.808	.921
Boston, Mass.	1.200	1.165	1.040	.895	.880	.918	.887	.809	.823	.814	.814	.816	.922
Cincinnati, Ohio-Ky.-Ind.	1.135	1.031	.831	.778	.893	.890	.790	.775	.796	.751	.772	.797	.853
Denver-Boulder, Colo.	1.080	.948	.787	.824	.831	.898	.848	.835	.891	.854	.850	.831	.873
Miami, Fla.	1.213	1.171	1.036	.919	.904	.927	.892	.872	.890	.881	.867	.865	.953
Milwaukee, Wis.	1.172	1.043	.872	.820	.934	.978	.832	.815	.859	.811	.818	.837	.899
N'Eastern Penna.	1.236	1.143	.934	.842	.907	.936	.844	.796	.824	.821	.818	.821	.910
Portland, Ore.-Wash.	1.172	1.142	.982	.873	.897	.927	.924	.874	.871	.831	.787	.779	.921
St. Louis, Mo.-Ill.	1.123	1.045	.913	.837	.864	.888	.826	.773	.791	.767	.773	.782	.865
San Diego, Calif.	1.215	1.150	1.056	1.039	1.067	1.081	.981	.920	.939	.895	.852	.852	1.000
Seattle-Everett, Wash.	1.203	1.171	1.026	.926	.949	.972	.963	.912	.915	.881	.817	.804	.970
Washington, D.C.-Md.-Va.	1.229	1.183	1.076	.961	.952	.973	.940	.913	.910	.898	.876	.880	.983
GROUP C (POPULATION 75,000 to 385,000)													
Atlanta, Ga.	1.194	1.116	.954	.836	.875	.896	.851	.809	.804	.777	.769	.770	.888
Buffalo, N.Y.	1.220	1.132	.983	.864	.870	.925	.820	.760	.801	.773	.766	.771	.891
Cleveland, Ohio	1.188	1.080	.914	.843	.930	.935	.851	.812	.839	.788	.804	.835	.902
Dallas-Fort Worth, Tex.	1.115	1.082	.958	.801	.786	.819	.794	.742	.740	.723	.702	.708	.831
Honolulu, Hawaii	1.422	1.420	1.332	1.233	1.214	1.227	1.204	1.132	1.136	1.129	1.104	1.096	1.221
Houston, Tex.	1.082	1.027	.862	.739	.744	.803	.752	.702	.725	.709	.697	.704	.796
Kansas City, Mo.-Kan.	1.086	.934	.788	.768	.842	.900	.777	.722	.782	.722	.740	.741	.817
Minneapolis, St. Paul, Minn.-Wis.	1.225	1.125	.966	.897	.959	1.006	.946	.888	.940	.895	.875	.863	.970
Pittsburgh, Pa.	1.200	1.133	.972	.826	.863	.913	.826	.759	.796	.767	.769	.773	.883
San Francisco-Oakland, Calif.	1.218	1.178	1.033	.964	1.007	1.020	.938	.895	.908	.864	.842	.842	.976

Gasoline-Unleaded Premium*

Standard Metropolitan Statistical Area**	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average For Year
U.S. City Average	$1.336	$1.282	$1.160	$1.061	$1.075	$1.100	$1.045	$0.999	$1.010	$0.987	$0.980	$0.984	$1.085
GROUP A-1 and A-2 (POPULATION 1,250,000 AND UP)													
Chicago-N'Western Ind.	1.428	1.353	1.231	1.133	1.182	1.212	1.131	1.076	1.094	1.052	1.080	1.101	1.173
Detroit	1.388	1.217	1.044	1.002	1.055	1.069	.983	1.004	.966	.943	.962	.948	1.048
L.A.-Long Beach-Anaheim	1.311	1.273	1.188	1.167	1.200	1.204	1.110	1.043	1.061	1.012	.990	.990	1.129
N.Y.-N'Eastern N.J.	1.355	1.317	1.194	1.037	1.029	1.067	1.023	.990	.991	.982	.965	.975	1.078
Philadelphia	1.337	1.280	1.149	.983	1.023	1.067	1.012	.960	.979	.970	.956	.960	1.057
GROUP B (POPULATION 385,000 to 1,250,000)													
Anchorage, Alas.	N.A.	1.310	1.289	1.170	1.134	1.110	1.106	1.115	1.112	1.112	1.051	1.062	1.143
Baltimore, Md.	1.329	1.304	1.219	1.109	1.075	1.086	1.060	1.028	1.023	1.002	.987	.989	1.101
Boston, Mass.	1.340	1.309	1.207	1.069	1.036	1.072	1.051	.956	.975	.974	.977	.974	1.078
Cincinnati, Ohio-Ky.-Ind.	1.326	1.239	1.052	1.009	1.086	1.082	.993	.984	.996	.947	.966	.975	1.057
Denver-Boulder, Colo.	1.232	1.112	.934	.983	.973	1.051	1.007	.994	1.031	.984	.982	.961	1.020
Miami, Fla.	1.319	1.271	1.147	1.008	.996	1.017	.972	.951	.972	.958	.946	.958	1.043
Milwaukee, Wis.	1.322	1.200	1.031	.989	1.083	1.120	.988	.965	1.006	.955	.953	.969	1.048
N'Eastern Penna.	1.357	1.282	1.112	1.001	1.060	1.095	1.024	.984	.999	1.002	1.002	1.008	1.078
Portland, Ore.-Wash.	1.326	1.305	1.128	1.017	1.009	1.034	1.034	.995	.997	.967	.920	.914	1.054
St. Louis, Mo.-Ill.	1.341	1.229	1.132	1.037	1.084	1.124	1.053	.992	1.010	.991	.993	.999	1.083
San Diego, Calif.	1.389	1.342	1.244	1.224	1.255	1.273	1.185	1.117	1.138	1.104	1.048	1.059	1.198
Seattle, Everett, Wash.	1.329	1.317	1.218	1.086	1.093	1.115	1.109	1.070	1.074	1.031	.981	.971	1.116
Washington, D.C.-Md.-Va.	1.450	1.416	1.327	1.214	1.196	1.205	1.182	1.166	1.162	1.152	1.128	1.136	1.228
GROUP C (POPULATION 75,000 to 385,000)													
Atlanta, Ga.	1.288	1.240	1.093	.980	1.010	1.039	.972	.946	.935	.912	.915	.919	1.021
Buffalo, N.Y.	1.323	1.250	1.096	.980	.994	1.040	.936	.890	.924	.893	.890	.903	1.010
Cleveland, Ohio	1.377	1.304	1.153	1.077	1.139	1.145	1.075	1.024	1.045	1.009	1.028	1.038	1.118
Dallas-Fort Worth, Tex.	1.239	1.199	1.078	.935	.923	.963	.941	.872	.859	.853	.832	.841	.962
Honolulu, Hawaii	N.A.	1.468	1.407	1.352	1.333	1.334	1.325	1.295	1.290	1.271	1.258	1.252	1.326
Houston, Tex.	1.275	1.225	1.092	.944	.953	.999	.945	.903	.912	.912	.903	.898	1.000
Kansas City, Mo.-Kan.	1.245	1.086	.932	.903	.968	1.036	.936	.872	.936	.861	.876	.881	.997
Minneapolis-St. Paul, Minn.-Wis.	1.325	1.230	1.086	1.017	1.071	1.118	1.068	1.000	1.051	1.014	.991	.978	1.079
Pittsburgh, Pa.	1.349	1.303	1.142	.995	1.023	1.073	1.002	.934	.978	.959	.958	.956	1.057
San Francisco-Oakland, Calif.	1.401	1.368	1.234	1.151	1.184	1.198	1.122	1.073	1.073	1.019	1.020	1.020	1.155

(*) In $/gal., including federal, state and local taxes and reflecting full-service, self-service and mini-service marketing; (**) As defined and used by Census Bureau and federal agencies for market comparisons.

Source: Bureau of Labor Statistics, Department of Commerce.

Retail Gasoline Prices For Selected Areas*

Standard Metropolitan Statistic Areas**	1986 Lead Reg.	1986 Unld. Reg.	1986 Unld. Prem.	1986 All Types	1985 Lead Reg.	1985 Unld. Reg.	1985 Unld. Prem.	1985 All Types	1984 Lead Reg.	1984 Unld. Reg.	1984 Unld. Prem.	1984 All Types
U.S. City Average	**$0.857**	**$0.928**	**$1.085**	**$0.931**	**$1.12**	**$1.20**	**$1.34**	**$1.20**	**$1.14**	**$1.21**	**$1.37**	**$1.20**
Group A-1 and A-2 (Population 1,250,000 And Up)												
Chicago-N'Western Ind.	.911	.953	1.173	.978	1.09	1.15	1.42	1.26	1.21	1.28	1.47	1.27
Detroit	.833	.944	1.048	.923	1.17	1.26	1.37	1.25	1.24	1.28	1.49	1.28
L.A.-Long Beach-Anaheim	.829	.957	1.129	.967	1.08	1.19	1.36	1.19	1.10	1.21	1.36	1.19
N.Y.-N'Eastern N.J.	.859	.908	1.078	.954	1.11	1.19	1.33	1.22	1.12	1.19	1.34	1.20
Philadelphia	.869	.880	1.057	.913	1.11	1.16	1.32	1.18	1.14	1.21	1.35	1.21
Group B (Population 385,000 to 1,250,000)												
Anchorage, Alas.	.950	.997	1.143	.993	1.18	1.24	NA	1.23	1.20	1.29	1.43	1.26
Baltimore, Md.	.878	.921	1.101	.954	1.09	1.16	1.33	1.19	1.09	1.16	1.31	1.17
Boston, Mass.	.858	.922	1.078	.946	1.08	1.17	1.33	1.19	1.08	1.18	1.33	1.16
Cincinnati, Ohio-Ky.-Ind.	.813	.853	1.057	.868	1.09	1.15	1.31	1.15	1.15	1.22	1.37	1.20
Denver-Boulder, Colo.	.788	.873	1.020	.845	1.06	1.16	1.29	1.12	1.05	1.15	NA	1.10
Miami, Fla.	.895	.953	1.043	.975	1.12	1.21	1.31	1.23	1.13	1.22	1.34	1.21
Milwaukee, Wis.	.857	.899	1.048	.898	1.13	1.20	1.33	1.19	1.15	1.20	1.37	1.19
N'Eastern Penna.	.869	.910	1.078	.917	1.15	1.23	1.35	1.21	1.14	1.20	1.34	1.20
Portland, Ore.-Wash.	.839	.921	1.054	.902	1.12	1.20	1.39	1.19	1.12	1.22	1.39	1.20
St. Louis, Mo.-Ill.	.800	.865	1.083	.876	1.06	1.14	1.31	1.13	1.09	1.14	NA	1.14
San Diego, Calif.	.877	1.000	1.198	.986	1.12	1.25	1.41	1.24	1.16	1.21	1.39	1.23
Seattle-Everett, Wash.	.890	.970	1.116	.958	1.15	1.22	1.35	1.21	1.18	1.24	1.36	1.22
Washington, D.C.-Md.-Va.	.891	.983	1.228	1.022	1.15	1.26	1.41	1.27	1.20	1.27	1.45	1.28
Group C (Population 75,000 to 385,000)												
Atlanta, Ga.	.768	.888	1.021	.877	1.09	1.20	1.34	1.19	1.11	1.23	1.35	1.20
Buffalo, N.Y.	.861	.891	1.010	.899	1.15	1.20	1.31	1.20	1.17	1.25	NA	1.23
Cleveland, Ohio	.821	.902	1.118	.925	1.09	1.18	1.35	1.19	1.13	1.21	1.35	1.20
Dallas-Fort Worth, Tex.	.788	.831	.962	.836	1.10	1.14	1.32	1.16	1.07	1.16	1.31	1.15
Honolulu, Hawaii	1.080	1.221	1.326	1.206	1.27	1.40	NA	1.39	1.37	1.44	NA	1.45
Houston, Tex.	.753	.796	1.000	.821	1.02	1.11	1.28	1.11	1.02	1.12	1.29	1.12
Kansas City, Mo.-Kan.	.758	.817	.997	.801	1.04	1.12	1.25	1.11	1.08	1.14	NA	1.11
Minneapolis-St. Paul, Minn.-Wis.	.903	.970	1.079	.952	1.17	1.25	1.34	1.23	1.17	1.22	1.39	1.21
Pittsburgh, Pa.	.855	.883	1.057	.894	1.15	1.22	1.37	1.23	1.15	1.24	1.37	1.23
San Francisco-Oakland, Calif.	.869	.976	1.155	.974	1.14	1.25	1.41	1.25	1.16	1.30	1.47	1.29

(*) In $/gal., including federal, state and local taxes and reflecting full-service, self-service and mini-service marketing; (**) As defined and used by Census Bureau and federal agencies for market comparisons.

Source: Bureau of Labor Statistics, Department of Commerce.

Wholesale Price Trends Through 1986

Year	Refinery products in eight refinery markets representing total U.S. Motor gasoline ¢ gal.	Kero-sine ¢ gal.	Light fuel ¢ gal.	Heavy fuel ¢ gal.	Average 4 products ¢ gal.	Average 4 products $/bbl.	Crude 8 areas $/bbl.	Crude Products vs. crude $/bbl.
1986 (a)	47.74	49.92	44.91	36.23	43.97	18.47	12.65	5.82
1985	81.11	81.69	76.66	56.41	73.06	30.69	24.090	6.60
1984	81.14	84.75	79.62	59.14	74.49	31.29	25.880	5.41
1983	86.97	85.12	80.05	57.30	75.33	31.64	26.190	5.51
1982	94.56	97.18	91.95	57.80	82.44	34.62	28.520	6.10
1981	101.63	101.03	97.20	61.17	88.75	37.28	31.770	5.51
1980	87.40	80.26	78.21	44.43	72.77	30.56	21.190	9.38
1979	56.84	56.50	54.47	33.63	49.50	20.79	12.640	8.15
1978	39.22	37.23	35.66	23.00	33.72	14.16	9.000	5.16
1977	36.99	35.81	34.41	25.87	32.21	13.95	8.570	5.38
1976	33.82	31.67	30.38	21.66	29.55	12.41	8.141	4.26
1975	30.27	27.41	26.09	22.03	27.03	11.35	7.560	3.79
1970	12.33	12.43	10.45	6.14	10.20	4.28	3.177	1.103
1965	11.52	11.28	9.04	4.81	9.12	3.83	2.864	0.966

(a) Preliminary

Source: Independent Petroleum Assn. of America. Product figures reflect trends in prices but not the actual sales realizations for producers or refiners.

Supplier Gasoline Prices, by Type of Seller

(¢ per gal., excluding taxes)

	Major Refiners			Other Refiners and Gas Plant Operators			Average		
	Sales to End-Users			Sales to End-Users			Sales to End-Users		
Year Month	Through Company Outlets	Other End-Users	Sales for Resale	Through Company Outlets	Other End-Users	Sales for Resale	Through Company Outlets	Other End-Users	Sales for Resale
1986									
January	91.8	81.3	78.4	86.9	79.8	71.0	90.3	80.8	76.7
February	83.8	70.8	67.2	77.7	68.2	58.2	81.9	70.0	65.0
March	68.1	57.2	54.0	63.4	53.1	46.9	66.7	55.7	52.4
April	60.9	54.6	52.9	57.6	52.1	48.1	59.9	53.8	51.8
May	65.2	60.3	59.1	62.3	57.7	54.3	64.4	59.5	57.9
June	66.7	58.8	55.9	63.5	54.9	49.9	65.8	57.5	54.5
July	60.1	49.3	47.4	56.6	45.9	40.8	59.1	48.0	45.8
August	57.2	49.5	49.1	53.5	45.5	44.0	56.2	47.7	47.9
September	57.9	50.0	49.9	54.6	47.2	44.6	56.9	48.8	48.7
October	54.8	47.4	47.2	51.6	44.7	42.8	53.8	46.2	46.1
November	54.7	48.5	48.2	51.3	45.0	43.8	53.7	46.8	47.1
December	57.2	49.2	48.4	51.9	45.5	43.9	55.6	47.6	47.3
1986 Average	**64.3**	**57.6**	**54.4**	**60.6**	**52.7**	**48.7**	**63.2**	**55.7**	**53.1**
1985									
January	86.5	78.6	76.6	83.2	75.9	70.7	85.5	78.2	75.2
February	85.5	78.7	77.7	81.6	78.4	72.4	84.4	78.7	76.4
March	88.7	82.2	82.2	85.7	82.3	77.8	87.9	82.2	81.1
April	94.0	88.1	87.0	91.1	84.9	82.9	93.2	87.4	86.0
May	95.9	89.8	88.6	93.2	86.6	84.2	95.2	89.2	87.5
June	96.6	89.9	88.9	94.3	86.2	84.0	95.9	89.1	87.7
July	96.8	90.0	88.3	94.3	86.5	84.1	96.1	89.3	87.3
August	95.6	87.8	86.1	92.9	84.9	81.7	94.8	87.3	85.0
September	93.7	85.9	84.5	90.6	81.5	79.3	92.8	84.8	83.2
October	92.8	85.7	84.2	88.9	83.0	79.7	91.7	84.9	83.1
November	93.8	87.4	85.8	89.9	84.1	81.4	92.7	86.1	84.7
December	94.3	86.4	84.3	89.9	83.2	78.6	92.9	85.4	83.0
1985 Average	**93.0**	**85.7**	**84.7**	**89.8**	**83.5**	**79.9**	**92.1**	**85.2**	**83.5**
1984 Average	**92.0**	**85.7**	**84.2**	**90.0**	**84.9**	**80.2**	**91.4**	**85.6**	**83.2**
1983 Average	**97.0**	**90.6**	**89.0**	**95.2**	**89.7**	**85.6**	**96.4**	**90.5**	**88.2**
1982 Average	**108.2**	**101.1**	**98.3**	**105.6**	**100.2**	**94.3**	**107.2**	**100.9**	**97.3**
1981 Average	**117.0**	**109.4**	**107.5**	**114.2**	**108.4**	**103.2**	**115.9**	**109.2**	**106.4**
1980 Average	**105.6**	**98.7**	**95.1**	**103.0**	**97.8**	**91.3**	**104.6**	**98.5**	**94.1**

Supplier Gasoline Prices, by Grade and Type

(¢ per gal., excluding taxes)

	Leaded Regular			Unleaded Regular			Premium		
	Sales to End-Users			Sales to End-Users			Sales to End-Users		
Year Month	Through Company Outlets	Other End-Users	Sales for Resale	Through Company Outlets	Other End-Users	Sales for Resale	Through Company Outlets	Other End-Users	Sales for Resale
1986									
January	83.4	78.5	72.4	90.5	80.6	76.5	103.4	89.1	86.5
February	74.8	66.9	60.2	81.7	69.3	64.7	96.6	81.0	76.4
March	59.8	52.3	48.2	66.1	55.3	51.9	82.4	66.4	62.8
April	54.1	52.3	49.1	59.3	52.9	51.1	72.7	61.1	59.8
May	59.0	58.1	55.2	64.1	58.7	57.5	75.6	66.0	65.5
June	60.3	56.2	51.3	65.2	56.5	53.9	77.2	64.4	62.8
July	53.5	46.4	42.5	58.0	47.0	45.0	71.4	55.2	54.1
August	50.5	47.1	45.1	55.0	46.8	47.0	68.1	53.8	55.5
September	51.4	48.4	45.8	55.7	47.9	47.5	68.6	54.0	56.5
October	48.3	45.1	43.5	52.5	45.4	44.8	65.6	52.8	53.8
November	48.2	45.8	44.6	52.2	45.6	45.6	65.5	53.8	54.7
December	50.0	46.4	44.6	54.0	46.5	45.8	67.2	54.9	55.1
1986 Average	**57.7**	**54.3**	**50.1**	**62.4**	**54.8**	**52.3**	**74.6**	**63.0**	**61.0**
1985									
January	78.1	75.2	70.7	85.8	79.1	76.0	96.3	86.3	84.6
February	77.1	75.3	72.1	84.6	79.6	77.4	95.3	86.2	85.4
March	80.5	78.6	76.8	88.0	83.7	82.1	98.7	88.4	89.9
April	85.7	83.6	81.4	93.5	88.7	87.1	103.3	96.2	94.7
May	87.6	85.4	82.9	95.6	90.4	88.8	105.4	98.4	96.1
June	88.2	85.5	83.1	96.4	90.2	89.0	105.8	97.5	96.2
July	88.4	86.6	83.3	96.5	89.7	88.1	106.1	96.5	95.2
August	87.1	85.1	81.1	95.1	87.2	85.7	104.9	94.8	93.2
September	85.6	82.2	79.2	93.1	85.2	83.8	104.7	93.0	92.1
October	84.8	82.2	79.4	92.1	85.4	83.4	105.1	92.1	91.8
November	85.8	83.0	80.9	93.1	86.5	85.0	105.4	92.3	93.3
December	85.8	82.1	78.7	93.3	85.8	83.0	105.6	94.2	92.2
1985 Average	**84.6**	**82.0**	**79.3**	**92.5**	**86.1**	**84.3**	**103.0**	**92.8**	**92.2**
1984 Average	**85.1**	**82.8**	**79.5**	**92.2**	**86.5**	**84.2**	**102.1**	**93.7**	**91.6**
1983 Average	**91.2**	**88.1**	**85.0**	**98.0**	**91.5**	**89.5**	**108.0**	**96.1**	**96.4**

Source: Energy Information Administration, Petroleum Marketing Monthly, December 1986, published March 1987.

Supplier Product Prices for Resale

(¢ per gal., excluding taxes)

						No. 2 Distillate					
Year Month	Finished Motor Gasoline	Finished Aviation Gasoline	Kerosine-Type Jet Fuel	Kerosine	No. 1 Distillate	No. 2 Fuel Oil	No. 2 Diesel Fuel	Average	No. 4 Fuel	Residual Fuel Oil	Propane (Consumer Grade)
1986											
January	76.7	109.8	77.0	83.8	82.7	73.7	73.3	73.6	65.1	51.7	43.9
February	65.0	108.9	68.0	67.2	63.9	56.4	56.0	56.3	51.3	38.7	35.4
March	52.4	102.2	58.1	60.9	57.3	51.9	47.4	50.0	44.9	31.6	29.2
April	51.8	98.5	49.4	52.6	56.6	45.9	46.3	46.1	40.5	28.0	27.3
May	57.9	95.6	46.7	50.4	54.0	45.2	44.1	44.7	34.9	26.5	28.5
June	54.5	92.2	44.5	50.1	46.8	40.0	39.6	39.7	33.3	26.2	28.3
July	45.8	86.7	39.9	40.7	40.9	34.8	34.0	34.4	27.3	21.9	25.3
August	47.9	83.0	39.3	48.1	48.1	40.0	38.8	39.3	33.0	23.6	24.6
September	48.7	81.6	42.2	49.2	49.1	41.6	41.8	41.7	33.3	28.1	24.8
October	46.1	82.9	43.7	47.8	48.2	41.0	40.9	41.0	32.3	27.6	25.1
November	47.1	81.8	43.5	51.2	50.6	42.4	41.8	42.1	35.9	27.4	24.3
December	47.3	81.3	45.3	53.3	51.4	44.2	43.5	43.9	39.6	30.3	23.6
1986 Average	**53.1**	**91.1**	**49.7**	**60.6**	**57.8**	**48.7**	**45.2**	**47.1**	**40.6**	**30.5**	**29.0**
1985											
January	75.2	114.5	79.6	85.8	82.2	75.7	74.9	75.4	71.9	64.8	40.1
February	76.4	114.0	79.5	86.5	80.6	75.2	74.2	74.8	72.2	65.0	39.3
March	81.1	113.6	78.9	85.7	82.6	76.1	75.6	75.9	67.3	62.4	38.0
April	86.0	112.6	79.4	84.7	86.1	79.3	79.2	79.2	67.5	60.3	37.9
May	87.5	113.2	78.2	80.4	85.4	76.5	78.9	77.7	66.0	55.0	38.1
June	87.7	113.7	76.1	75.9	82.4	72.9	75.5	74.3	64.0	52.4	37.0
July	87.3	113.6	75.2	76.9	79.9	70.3	72.3	71.4	62.3	53.9	36.3
August	85.0	113.3	76.8	79.7	79.0	72.1	72.5	72.3	60.3	53.2	36.5
September	83.2	113.0	79.2	85.9	84.5	77.0	76.3	76.7	61.5	56.1	37.6
October	83.1	113.0	81.6	90.1	87.9	81.7	80.5	81.1	64.6	54.9	39.7
November	84.7	112.6	83.6	93.6	93.1	84.9	84.3	84.7	66.4	53.6	43.0
December	83.0	108.1	83.1	92.7	93.0	83.2	82.1	82.8	72.6	55.1	46.8
1985 Average	**83.5**	**113.0**	**79.4**	**87.4**	**86.3**	**77.6**	**77.2**	**77.4**	**67.2**	**57.7**	**39.8**
1984 Average	**83.2**	**116.5**	**83.0**	**91.6**	**89.2**	**82.1**	**80.3**	**81.3**	**70.7**	**65.4**	**45.0**
1983 Average	**88.2**	**117.8**	**85.4**	**89.2**	**89.6**	**81.5**	**80.8**	**81.2**	**72.6**	**60.9**	**48.4**
1982 Average	**97.3**	**122.6**	**95.3**	**101.8**	**103.8**	**91.4**	**91.4**	**91.4**	**73.7**	**61.2**	**42.7**
1981 Average	**106.4**	**125.0**	**101.2**	**106.6**	**107.1**	**97.6**	**97.2**	**97.4**	**78.3**	**66.3**	**46.6**
1980 Average	**94.1**	**112.8**	**86.8**	**86.4**	**88.0**	**80.3**	**80.1**	**80.2**	**67.0**	**52.8**	**41.5**

Supplier Product Prices for End-Users

(¢ per gal., excluding taxes)

						No. 2 Distillate					
Year Month	Finished Motor Gasoline	Finished Aviation Gasoline	Kerosine-Type Jet Fuel	Kerosine	No. 1 Distillate	No. 2 Fuel Oil	No. 2 Diesel Fuel	Average	No. 4 Fuel	Residual Fuel Oil	Propane (Consumer Grade)
1986											
January	89.1	116.2	80.5	105.4	85.6	87.1	78.1	80.1	77.1	57.1	77.8
February	80.3	117.2	77.9	93.4	67.0	69.9	61.5	63.1	63.9	45.8	71.4
March	65.2	111.5	69.0	85.0	61.0	63.0	51.2	53.2	57.2	39.0	75.1
April	59.1	102.9	57.3	79.4	61.3	55.0	48.5	49.4	48.6	33.0	75.9
May	63.8	102.2	51.9	67.2	61.0	50.0	46.4	46.9	44.4	30.1	73.1
June	64.7	97.0	48.2	49.3	50.7	44.4	42.0	42.3	42.2	29.8	73.5
July	57.8	94.3	43.4	48.2	43.2	38.4	36.5	36.7	35.2	25.9	70.2
August	55.3	94.9	41.0	62.5	50.4	43.8	40.5	40.9	36.8	26.5	68.4
September	56.1	93.2	41.4	75.1	52.2	46.1	43.3	43.6	38.7	29.8	70.4
October	53.1	91.1	41.6	69.5	50.4	44.8	41.9	42.3	36.5	30.1	69.8
November	53.1	87.2	42.4	74.5	51.6	48.3	43.2	43.9	40.9	31.2	69.6
December	54.8	88.8	42.9	76.8	51.8	51.5	45.5	46.7	44.6	34.7	72.0
1986 Average	**62.3**	**100.1**	**52.8**	**79.3**	**62.0**	**56.0**	**47.9**	**49.1**	**49.4**	**34.3**	**72.5**
1985											
January	84.6	121.7	81.4	105.9	85.5	87.4	77.6	80.2	80.3	68.6	78.7
February	83.6	121.1	80.9	103.7	84.2	86.8	76.7	79.1	80.7	68.6	76.1
March	87.1	121.4	80.4	103.1	86.2	86.0	77.0	78.4	79.5	67.1	74.6
April	92.4	121.2	80.1	101.0	90.2	85.8	79.9	80.7	78.7	64.1	68.4
May	94.4	121.9	79.5	94.1	88.6	82.2	79.7	80.0	74.6	59.5	70.5
June	95.2	121.7	78.6	88.2	86.9	77.8	77.2	77.3	71.9	55.6	66.8
July	95.4	120.2	78.5	86.0	84.7	72.3	74.5	74.2	71.0	56.3	62.9
August	94.0	118.9	77.7	89.9	84.4	74.7	73.8	73.9	69.0	55.6	62.8
September	91.9	119.5	78.1	96.1	88.5	81.2	78.1	78.5	73.0	58.6	63.8
October	90.8	118.9	78.8	100.6	90.8	85.2	81.6	82.1	75.1	58.3	72.4
November	91.7	118.3	80.1	106.8	94.7	91.3	85.5	86.4	77.2	56.8	74.0
December	91.9	117.0	80.9	111.5	93.0	92.3	85.6	87.3	78.5	58.2	77.0
1985 Average	**91.2**	**120.1**	**79.6**	**103.0**	**88.0**	**84.9**	**78.9**	**79.9**	**77.3**	**61.0**	**71.7**
1984 Average	**90.7**	**123.4**	**84.2**	**103.6**	**92.7**	**91.6**	**82.3**	**83.7**	**79.6**	**68.7**	**73.7**
1983 Average	**95.4**	**125.5**	**87.6**	**96.1**	**96.2**	**91.6**	**82.6**	**83.9**	**76.6**	**65.1**	**70.9**
1982 Average	**106.0**	**131.2**	**96.3**	**108.9**	**102.3**	**90.5**	**94.2**	**92.5**	**75.0**	**67.6**	**59.2**
1981 Average	**114.7**	**130.3**	**102.4**	**112.3**	**103.9**	**91.4**	**99.5**	**95.8**	**79.7**	**75.6**	**56.5**
1980 Average	**103.5**	**108.4**	**86.8**	**90.2**	**83.4**	**78.8**	**81.8**	**80.4**	**68.2**	**60.7**	**48.2**

Source: Energy Information Administration, Petroleum Marketing Monthly, December 1986, published March 1987.

Supplier Prices of No. 2 Distillate Fuel Oil

(¢ per gal., excluding taxes)

	Sales to End-Users						
	To Residential Consumers	To Commercial/ Institutional Consumers	To Industrial Consumers	Sales Through Company-Operated Retail Outlets	To Other End-Users	Average	Sales for Resale
1986							
January......	106.4	81.6	80.1	88.9	82.6	92.2	74.3
February.....	95.8	64.4	65.2	75.3	68.0	77.6	57.4
March.......	88.7	55.7	56.8	64.6	60.1	67.0	51.4
April.........	80.7	51.8	54.8	61.9	59.8	61.1	46.8
May.........	77.4	49.0	53.0	60.5	58.1	57.5	45.5
June.........	72.9	44.1	47.6	56.7	53.9	52.1	40.8
July.........	66.9	38.2	43.1	51.9	46.0	45.5	35.4
August.......	66.4	42.8	47.9	52.9	49.0	49.1	40.2
September...	68.5	45.0	48.9	54.0	51.0	51.4	42.5
October......	67.8	43.9	47.7	53.1	50.5	51.2	41.7
November....	69.8	45.6	49.1	54.3	51.7	54.4	42.8
December....	72.5	48.3	51.1	56.3	53.1	58.5	44.8
1986 Average..	**84.4**	**51.5**	**53.8**	**60.2**	**56.8**	**61.5**	**48.1**
1985							
January......	104.9	82.0	82.7	88.4	82.3	91.7	76.3
February.....	105.4	81.0	81.7	87.0	82.0	90.8	75.9
March.......	105.0	81.8	82.5	86.8	84.4	88.8	76.9
April.........	105.3	82.9	84.7	88.5	86.3	88.8	79.8
May.........	103.6	82.4	83.7	88.8	85.8	86.9	78.3
June.........	100.7	79.3	80.6	87.5	84.2	83.9	74.9
July.........	98.0	76.7	78.7	85.9	81.5	81.4	72.2
August.......	97.3	76.7	79.0	85.4	81.4	81.5	73.1
September...	99.6	80.7	83.1	87.2	85.9	85.8	77.2
October......	103.0	84.2	86.2	90.[illegible]	89.1	89.7	81.4
November....	108.6	88.3	90.1	93.7	91.1	94.6	85.0
December....	110.5	89.1	89.2	93.9	88.6	97.3	83.5
1985 Average..	**105.3**	**82.1**	**83.4**	**88.6**	**85.3**	**89.0**	**78.1**
1984 Average..	**109.1**	**85.7**	**87.0**	**92.0**	**89.2**	**92.6**	**81.9**
1983 Average..	**107.8**	**86.3**	**88.3**	**94.3**	**89.7**	**93.3**	**81.8**

Supplier Prices of Residual Fuel Oil

(¢ per gal., excluding taxes)

	Residual Fuel Oil Sulfur Content Less Than or Equal to 1%		Residual Fuel Oil Sulfur Content Greater Than 1%		Average	
	Sales to End-Users	Sales for Resale	Sales to End-Users	Sales for Resale	Sales to End-Users	Sales for Resale
1986						
January......	62.0	57.1	52.9	49.5	57.1	51.7
February.....	49.0	43.9	42.7	36.3	45.8	38.7
March.......	42.7	37.6	35.7	28.3	39.0	31.6
April.........	36.8	31.7	30.1	25.8	33.0	28.0
May.........	35.0	30.5	26.8	23.5	30.1	26.5
June.........	32.3	30.1	26.8	22.9	29.8	26.2
July.........	27.4	23.8	24.4	20.3	25.9	21.9
August.......	29.3	26.9	23.2	21.8	26.5	23.6
September...	31.5	29.9	28.2	26.4	29.8	28.1
October......	31.9	28.9	28.8	26.2	30.1	27.6
November....	33.7	29.5	29.0	25.1	31.2	27.4
December....	37.7	34.1	31.6	27.6	34.7	30.3
1986 Average..	**37.2**	**33.0**	**31.7**	**28.8**	**34.3**	**30.5**
1985						
January......	71.2	67.6	66.5	63.4	68.6	64.8
February.....	71.1	67.6	66.0	63.4	68.6	65.0
March.......	69.8	66.2	65.0	60.8	67.1	62.4
April.........	67.5	63.0	61.9	58.8	64.1	60.3
May.........	61.2	58.1	58.0	53.5	59.5	55.0
June.........	59.9	54.9	52.7	50.6	55.6	52.4
July.........	58.9	56.4	54.5	52.8	56.3	53.9
August.......	57.1	55.2	53.8	52.0	55.6	53.2
September...	62.8	60.1	54.8	53.1	58.6	56.1
October......	63.6	60.1	53.8	52.3	58.3	54.9
November....	61.7	57.8	52.8	50.7	56.8	53.6
December....	62.6	60.7	54.4	52.3	58.2	55.1
1985 Average..	**64.4**	**61.0**	**58.2**	**56.0**	**61.0**	**57.7**
1984 Average..	**72.0**	**68.5**	**65.9**	**63.9**	**68.7**	**65.4**
1983 Average..	**69.5**	**64.3**	**61.1**	**59.1**	**65.1**	**60.9**
1982 Average..	**74.7**	**69.5**	**61.1**	**57.2**	**67.6**	**61.2**
1981 Average..	**82.9**	**74.8**	**67.3**	**62.2**	**75.6**	**66.3**
1980 Average..	**67.5**	**60.8**	**52.3**	**47.9**	**60.7**	**52.8**

Source: Energy Information Administration, Petroleum Marketing Monthly, December 1986, published March 1987.

Residential No. 2 Prices for Selected States

(¢ gal., excluding taxes)

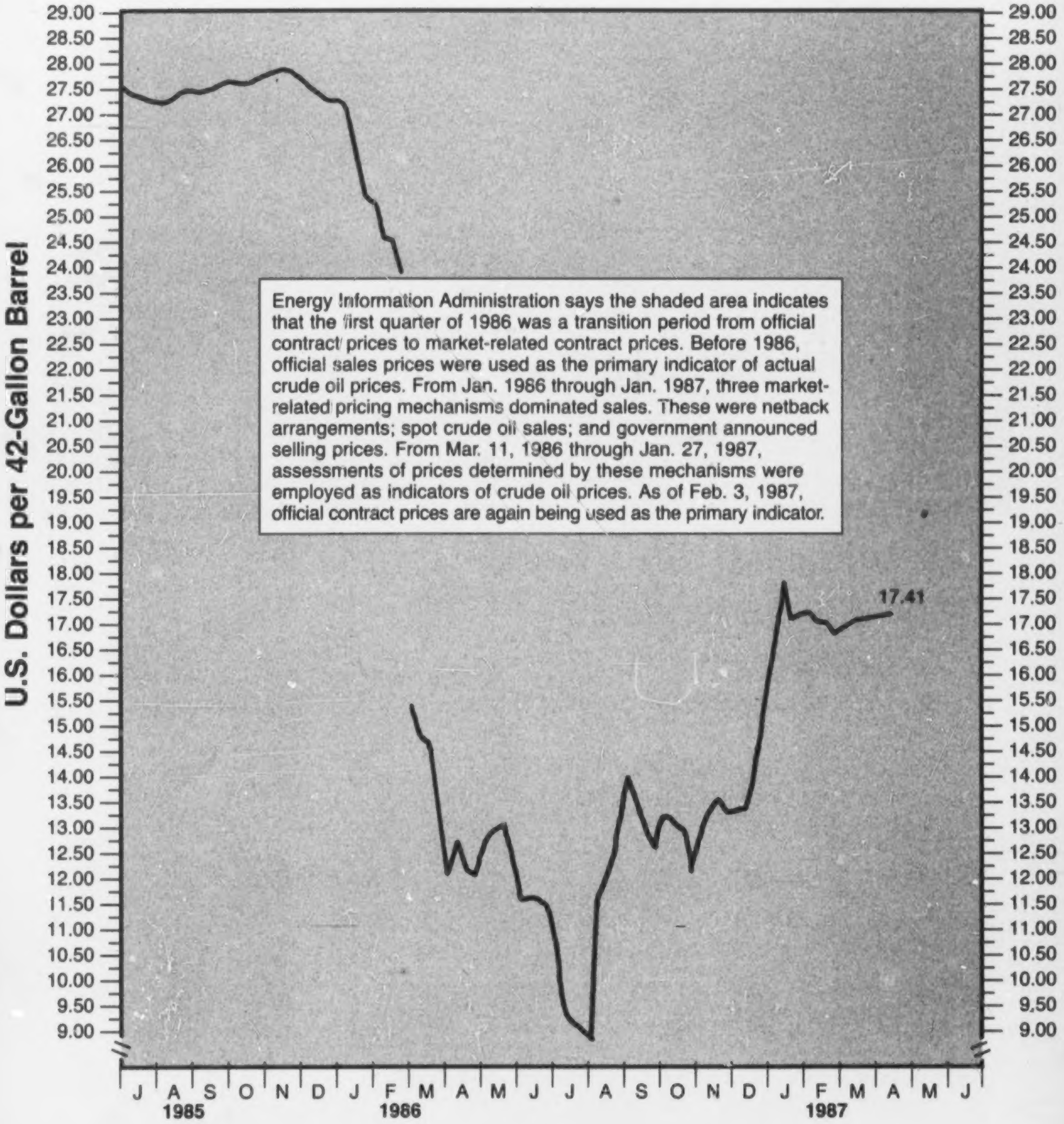
	Conn.	Maine	Mass.	N.H.	R.I.	Vt.	Del.	D.C.	Md.	N.J.	N.Y.	Pa.	Va.
1986													
January	111.6	101.1	105.9	103.2	101.9	109.0	102.3	116.3	112.2	107.7	111.4	104.7	107.0
February	99.5	90.9	90.6	88.5	93.5	100.2	93.9	105.4	99.9	98.3	102.6	95.3	98.2
March	93.4	86.5	85.9	84.2	84.6	95.6	87.1	97.6	93.9	91.7	96.3	86.9	90.9
April	86.2	77.9	76.7	74.4	72.1	89.0	77.1	93.2	88.6	84.0	87.5	77.9	84.2
May	80.8	74.5	74.2	70.6	76.6	84.7	74.2	87.9	85.0	80.1	85.1	72.6	74.6
June	77.7	68.5	68.8	65.4	72.6	78.9	73.7	81.7	79.7	75.6	81.3	66.0	74.4
July	68.5	59.3	64.6	62.9	69.1	70.9	67.3	74.7	75.8	76.8	72.9	64.1	67.8
August	67.0	58.5	65.1	63.4	69.0	68.9	66.6	70.7	70.7	72.3	71.6	62.6	71.1
September	68.4	58.2	67.9	62.7	69.2	70.1	66.9	72.1	70.3	73.4	74.0	66.6	70.5
October	68.6	59.1	68.4	63.8	68.7	70.3	66.1	74.2	72.4	74.7	74.0	66.5	69.6
November	69.5	59.7	70.0	65.0	72.1	71.3	67.9	76.9	73.4	74.6	76.1	66.4	68.3
December	72.5	67.2	73.2	69.9	74.3	73.3	71.4	79.9	77.2	76.0	78.7	68.5	70.4
1986 Average	**89.0**	**74.4**	**82.3**	**75.6**	**82.3**	**86.7**	**85.0**	**92.9**	**91.4**	**90.1**	**91.1**	**81.5**	**86.2**
1985													
January	106.9	97.9	107.2	100.7	106.1	106.9	103.8	112.1	107.5	105.0	111.3	102.9	106.2
February	107.2	98.5	107.1	102.7	106.9	107.3	104.0	117.1	108.6	105.7	112.0	103.2	106.8
March	106.8	100.6	107.3	103.3	106.2	107.9	104.6	115.9	108.3	105.1	111.3	102.1	105.8
April	107.0	101.5	106.6	102.3	106.8	106.5	104.1	113.9	109.6	105.2	111.0	101.0	105.4
May	106.2	99.4	104.5	99.9	102.1	105.4	100.7	112.4	108.2	103.3	109.8	99.7	105.9
June	103.5	95.4	101.1	94.4	98.6	103.7	96.4	107.2	104.4	99.6	108.1	94.9	104.3
July	100.6	91.4	98.3	91.2	97.4	101.4	96.2	107.3	101.2	97.4	105.3	92.1	99.3
August	99.6	90.5	96.2	91.8	95.9	101.4	97.5	105.5	98.9	97.5	105.5	92.5	98.9
September	100.5	94.0	100.7	97.6	101.0	104.7	98.8	107.1	103.3	101.3	104.5	96.8	101.9
October	106.6	99.5	104.6	102.3	104.4	106.7	102.7	109.9	106.2	103.3	107.1	96.6	105.0
November	111.4	103.7	110.7	108.0	111.6	111.1	107.0	114.4	111.9	109.3	114.4	105.5	108.4
December	114.2	105.5	111.1	108.9	110.9	113.0	110.5	117.2	112.7	112.0	115.0	109.0	109.9
1985 Average	**108.0**	**99.7**	**107.0**	**102.4**	**106.7**	**107.7**	**104.6**	**114.3**	**106.8**	**105.9**	**111.3**	**102.3**	**106.3**
1984 Average	112.1	103.9	111.6	108.4	111.4	111.9	109.6	118.7	113.5	111.0	115.5	107.9	110.5
1983 Average	109.1	102.8	109.1	104.1	110.5	112.9	106.0	117.0	110.3	107.9	112.1	105.8	108.7
1982 Average	118.3	115.5	117.6	117.4	120.1	120.1	111.3	124.5	117.1	117.4	120.5	113.7	117.7
1981 Average	121.7	120.4	121.3	123.7	123.8	125.4	117.3	127.4	121.4	121.5	123.2	118.1	120.5
1980 Average	98.3	96.3	97.8	100.4	101.1	101.5	95.4	102.6	97.9	97.9	98.2	96.4	98.5

	W.Va.	Ill.	Ind.	Mich.	Minn.	Ohio	Wis.	Idaho	Ark.	Ore.	Wash.	U.S. Avg.
1986												
January	100.1	97.6	99.8	102.6	100.5	100.7	96.4	97.1	106.8	100.1	104.5	106.4
February	87.8	83.1	84.9	91.9	86.3	91.9	83.9	90.9	104.9	83.7	90.4	95.8
March	79.7	74.7	75.5	80.5	80.1	80.8	76.0	76.5	113.6	66.9	75.3	88.7
April	70.8	68.6	73.9	74.6	76.3	78.2	74.0	69.8	95.6	62.5	74.9	80.7
May	67.4	72.9	67.2	72.3	79.4	75.2	71.8	74.7	94.3	64.1	71.1	77.4
June	63.4	67.3	66.5	65.3	74.5	69.1	69.2	66.8	89.3	60.0	65.2	72.9
July	53.9	69.4	60.1	66.6	69.6	62.3	62.7	63.8	84.5	54.6	60.2	66.9
August	59.7	66.5	65.6	69.9	67.6	62.5	63.6	58.5	84.3	55.6	60.5	66.4
September	62.1	68.4	66.7	70.8	70.0	64.2	67.1	60.5	89.3	61.9	66.9	68.5
October	64.0	63.0	65.2	70.0	67.8	61.5	62.7	62.1	79.1	62.5	68.2	67.8
November	68.3	72.8	65.4	70.4	68.0	61.0	65.6	63.5	80.0	62.7	68.8	69.8
December	72.6	72.8	69.3	73.3	68.7	65.3	68.5	63.5	85.3	63.9	63.8	72.5
1986 Average	**74.9**	**74.3**	**74.9**	**81.2**	**79.3**	**77.9**	**75.4**	**73.8**	**94.4**	**70.4**	**76.6**	**84.4**
1985												
January	98.4	95.2	98.6	102.1	99.5	98.3	97.3	97.4	108.6	97.0	100.6	104.9
February	98.3	94.4	97.8	101.0	99.8	98.7	96.2	96.9	107.6	98.6	99.8	106.4
March	98.1	94.5	96.3	101.3	101.0	97.9	96.4	96.6	112.8	95.7	100.3	105.0
April	96.0	96.6	98.6	100.0	101.1	99.8	97.7	95.7	107.0	96.5	99.2	105.3
May	93.8	96.4	97.4	98.3	103.8	99.6	99.5	96.0	106.9	96.7	98.1	103.6
June	90.7	92.0	97.6	98.4	104.3	97.1	94.2	95.9	107.3	95.5	99.2	100.7
July	90.3	89.7	93.3	97.4	100.5	92.9	93.0	94.8	106.4	95.3	97.3	98.0
August	88.6	90.6	92.9	97.2	100.1	91.8	93.0	94.5	106.9	93.0	96.7	97.3
September	96.2	95.6	96.5	99.1	98.7	95.6	94.9	94.3	109.2	93.4	97.6	99.6
October	98.7	100.1	101.2	101.8	101.1	97.9	99.1	97.2	109.1	94.0	100.0	103.0
November	104.4	104.0	105.3	103.5	105.7	104.4	102.0	97.9	106.1	98.8	104.4	108.6
December	104.7	103.4	105.3	107.1	105.2	105.9	103.2	98.8	106.5	102.3	106.1	110.5
1985 Average	**98.0**	**97.5**	**99.1**	**102.1**	**101.9**	**99.7**	**98.3**	**97.2**	**108.3**	**97.1**	**101.1**	**105.3**
1984 Average	102.1	100.1	103.1	105.0	104.1	102.1	101.0	98.5	106.9	99.3	102.6	109.1
1983 Average	101.0	100.4	100.7	106.4	103.1	101.3	101.2	101.8	108.8	103.6	109.0	107.8
1982 Average	109.3	110.9	114.3	113.9	115.1	110.2	107.8	110.4	117.4	111.6	117.6	116.0
1981 Average	115.0	114.9	118.5	118.3	118.4	113.2	109.1	110.4	118.0	111.4	116.5	119.4
1980 Average	92.2	95.8	99.6	97.8	99.9	91.9	91.5	91.6	97.8	97.3	100.8	97.4

Source: Energy Information Administration, Petroleum Marketing Monthly, December 1986, published March 1987.

World Crude Oil Prices

(Average price (FOB), internationally traded only, weighted by estimated volume).



Energy Information Administration says the shaded area indicates that the first quarter of 1986 was a transition period from official contract prices to market-related contract prices. Before 1986, official sales prices were used as the primary indicator of actual crude oil prices. From Jan. 1986 through Jan. 1987, three market-related pricing mechanisms dominated sales. These were netback arrangements; spot crude oil sales; and government announced selling prices. From Mar. 11, 1986 through Jan. 27, 1987, assessments of prices determined by these mechanisms were employed as indicators of crude oil prices. As of Feb. 3, 1987, official contract prices are again being used as the primary indicator.

U.S. Dollars per 42-Gallon Barrel
29.00
28.50
28.00
27.50
27.00
26.50
26.00
25.50
25.00
24.50
24.00
23.50
23.00
22.50
22.00
21.50
21.00
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20.00
19.50
19.00
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13.00
12.50
12.00
11.50
11.00
10.50
10.00
9.50
9.00
17.41
J
A
S
O
N
D
J
F
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J
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A
M
J
1985
1986
1987

Source: Energy Information Administration, Weekly Petroleum Status Report.

Spot Market Product Prices

($ per bbl.)

		Motor Gasoline		Gasoil/Heating Oil		Residual Fuel Oil	
		Rotterdam (98-Octane)	New York (89-Octane)	Rotterdam (0.3% Sulfur)	New York (0.2% Sulfur)	Rotterdam (1% Sulfur)	New York (1% Sulfur)
1987							
Jan.	2	18.00	19.43	20.04	19.68	15.39	17.50
	9	21.86	20.83	22.32	21.25	17.42	18.50
	16	21.51	21.11	24.26	23.21	21.02	20.00
	23	20.28	20.69	22.32	22.47	20.50	20.00
	30	20.11	20.27	21.78	21.42	17.11	19.25
Feb.	6	19.99	21.31	20.84	21.31	16.52	18.00
	13	19.51	20.37	19.50	20.06	15.31	16.25
	20	19.69	19.53	18.96	19.53	15.54	16.00
	27	19.69	19.01	17.56	18.48	14.48	15.25
Mar.	6	20.39	21.32	18.69	20.06	15.61	16.00
	13	22.21	21.53	20.30	21.15	16.21	17.00
	20	22.56	27.63	20.17	21.36	16.36	18.00
	27	22.68	22.05	20.30	20.69	15.61	17.25
Apr.	3	23.15	21.84	19.77	20.94	17.41	17.85
	10	23.44	21.00	19.97	20.06	16.66	16.15
	17	22.74	20.90	18.90	20.27	16.44	17.75
	24	22.39	21.00	19.77	20.73	17.12	18.40
1986							
Jan.	3	30.07	29.19	32.57	32.44	22.22	24.50
	10	29.13	29.08	30.96	30.87	23.42	24.50
	17	27.84	28.66	27.27	27.82	21.39	23.00
	24	25.26	26.14	23.72	24.78	17.64	21.15
	31	24.67	26.35	26.94	24.99	17.64	17.50
Feb.	7	23.85	21.42	26.00	21.52	14.63	15.50
	14	21.62	20.51	25.26	22.36	14.41	16.00
	21	20.39	19.40	27.47	22.15	14.71	16.25
	28	19.22	19.02	26.80	23.45	15.46	17.05
Mar.	7	19.22	17.22	23.45	26.46	14.48	16.25
	14	17.99	17.85	26.00	24.36	14.48	15.05
	21	17.99	19.32	24.66	24.99	14.48	16.00
	28	18.22	18.90	21.91	21.00	13.66	15.45
Apr.	4	18.11	18.63	19.03	17.43	12.38	14.00
	11	17.99	19.85	22.18	18.48	11.03	12.50
	18	18.17	19.53	20.30	17.43	10.28	12.50
	25	18.75	23.10	22.18	19.22	10.28	12.25
May	2	20.22	23.42	21.04	17.22	10.28	11.75
	9	22.27	23.42	20.64	20.37	10.81	13.85
	16	23.15	23.42	18.56	19.95	10.81	14.00
	23	23.56	22.89	17.89	19.95	12.01	14.45
	30	22.33	21.15	16.68	18.38	12.16	14.25
Jun.	6	20.04	18.69	15.48	16.07	11.63	13.25
	13	18.70	18.90	15.88	16.49	10.51	12.00
	20	19.22	18.27	15.48	15.75	10.51	12.00
	27	19.22	18.27	14.81	15.65	10.51	11.65
Jul.	4	Not available.					
	11	17.58	15.75	11.52	13.86	9.08	10.65
	18	14.00	15.02	13.40	14.28	9.08	9.40
	25	14.89	14.70	13.14	13.65	8.63	9.40
Aug.	1	14.95	14.28	12.47	13.44	8.26	9.50
	8	19.05	18.59	16.89	17.33	8.94	12.00
	15	19.64	19.22	16.76	17.33	10.66	12.50
	22	19.64	19.74	17.16	17.64	11.26	12.50
	29	21.10	19.43	17.69	17.43	11.26	12.25
Sep.	5	21.69	19.85	18.03	18.27	12.39	12.50
	12	20.93	18.27	16.89	16.59	12.84	13.50
	19	20.52	17.33	15.75	16.59	11.79	12.20
	26	17.88	17.01	15.62	16.28	11.71	12.25
Oct.	3	17.88	18.06	16.49	17.64	11.49	12.75
	10	18.05	18.06	16.76	16.91	12.31	13.25
	17	18.00	17.75	16.15	16.17	11.86	12.75
	24	17.59	18.38	15.75	16.38	11.86	12.25
	31	17.00	18.06	14.75	16.17	11.11	12.35
Nov.	7	16.24	18.90	16.49	17.43	12.91	13.10
	14	17.41	19.11	17.03	18.27	14.04	13.10
	21	17.23	19.01	17.29	17.89	14.11	14.25
	28	16.59	18.48	16.42	17.75	14.41	15.00
Dec.	5	16.41	18.52	16.55	18.21	14.71	15.25
	12	16.18	18.80	16.49	18.63	13.66	14.50
	19	16.47	18.69	17.49	18.73	14.49	15.50
	26	Not available.					

Source: Energy Information Administration, Weekly Petroleum Status Reports.

International Prices for Gasoline and Fuel Oil

(U.S. $ per gal. for gasoline, pump retails, all taxes included. U.S. $ per gal. for distillate and kerosine but $ per bbl. for residual; all taxes are included except for U.S. fuel oils.)

	1/1/86					1/1/85				
	Automotive Fuels		Residential			Automotive Fuels		Residential		
Country	Leaded Premium Gasoline	Diesel Fuel	Distillate	Kerosine	Industrial Residual	Leaded Premium Gasoline	Diesel Fuel	Distillate	Kerosine	Industrial Residual
WESTERN HEMISPHERE										
Argentina	$1.82	$0.73	$0.69	$0.80	$20.24	$1.95	$0.60	$0.60	$0.69	$17.07
Bolivia	.98	.98	NA	.93	NA	.76	.88	.88	.25	NA
Brazil	1.81	1.17	NA	1.21	23.22	NA	1.13	.63	1.12	27.39
Canada	1.38*	1.30	1.01	1.29	NA	NA	1.35	1.09	1.35	NA
Chile	1.64	1.35	.90	1.30	40.84	1.68	1.32	1.33	1.43	43.29
Colombia	.70	.62	.35	.51	NA	NA	NA	NA	NA	NA
Dominican Republic	1.25	1.41	1.07	.98	54.10	1.21	1.21	1.21	1.15	48.88
Ecuador	.67	.41	NA	.14	10.76	.97	.60	NA	.21	15.62
El Salvador	3.88	2.10	NA	2.28	42.00	—	—	—	—	—
Jamaica	1.66	1.20	.95	.68	34.20	1.50	1.00	.98	.62	31.63
Mexico	1.02	.61	.21	.46	7.57	1.36	.81	.67	.42	7.05
Panama	1.98	1.19	NA	1.10	NA	2.28	1.33	NA	1.20	35.53
Paraguay	4.10	2.21	NA	2.21	49.68	3.47	1.89	1.83	1.57	44.38
Peru	1.50	1.07	NA	.27	37.20	1.12	.72	.72	43	26.04
United States	1.19*	1.16	1.06**	1.05**	22.22**	1.31*	1.16**	.83	1.06**	29.85**
Uruguay	2.86	1.63	1.29	1.59	30.44	2.33	1.31	NA	1.31	24.60
Venezuela	.60	.18	NA	.25	4.24	.61	.18	.14	.25	4.24
WESTERN EUROPE										
Austria	2.60	1.95	1.08	NA	34.28	2.60	1.24	NA	2.51	33.80
Belgium	2.26	1.42	1.04	1.12	22.30	1.92	1.04	.99	.79	29.99
Denmark	2.54	1.12	1.49	1.63	25.41	2.05	.80	1.04	1.08	30.48
Finland	2.63	1.90	1.07	1.39	22.92	2.27	1.38	1.50	.98	30.55
France	2.58	1.87	1.38	NA	28.90	2.18	1.30	1.34	NA	30.86
Germany, West	2.04	1.70	1.00	NA	25.68	1.66	1.18	1.08	NA	32.05
Greece	2.04	1.04	1.06	NA	29.10	1.90	.78	.92	.76	28.29
Ireland	2.97	.90	1.22	NA	32.22	—	—	—	—	—
Italy	3.09	1.40	1.48	1.58	23.88	2.52	.96	1.29	1.09	30.02
Luxembourg	2.02	1.54	1.15	1.09	26.97	1.58	1.06	.99	.74	30.93
Netherlands	2.26	1.28	1.17	NA	24.60	1.87	1.17	NA	NA	31.58
Norway	2.52	1.11	1.23	1.27	27.33	2.17	.83	1.06	.97	32.42
Portugal	2.76	1.68	1.68	1.63	30.02	2.14	1.23	1.72	1.15	NA
Spain	2.30	1.53	1.12	NA	30.36	2.02	1.13	1.16	1.09	29.51
Sweden	2.26	1.40	1.32	NA	37.36	1.88	1.07	1.30	1.27	43.54
Switzerland	2.18	2.38	.92	NA	24.91	1.69	1.55	1.18	NA	34.72
Turkey	1.25	.84	.84	.88	22.22	1.56	.84	.99	.83	27.69
United Kingdom	2.24	1.93	1.06	NA	12.60	1.81	1.30	NA	NA	34.17
Yugoslavia	—	—	—	—	—	1.99	1.30	1.54	.94	31.72
MIDDLE EAST										
Israel	—	—	—	—	—	1.97	1.34	1.25	1.32	26.67
Iran	1.59	NA	.41	.10	NA	.37	—	—	—	—
AFRICA										
Ethiopia	—	—	—	—	—	2.36	1.22	1.11	.97	NA
Ghana	1.08	.88	NA	.57	20.31	1.42	.98	.75	.62	29.73
Kenya	—	—	—	—	—	NA	NA	NA	NA	NA
Morocco	2.39	1.36	NA	1.23	27.90	2.42	1.14	.83	.99	30.90

International Prices (continued)

(U.S. $ per gal. for gasoline, pump retails and all taxes included. U.S. $ per gal. for distillate and kerosine but $ per bbl. for residual; all taxes are included except for U.S. fuel oils.)

	1/1/86					1/1/85				
	Automotive Fuels		Residential			Automotive Fuels		Residential		
Country	Leaded Premium Gasoline	Diesel Fuel	Distillate	Kerosine	Industrial Residual	Leaded Premium Gasoline	Diesel Fuel	Distillate	Kerosine	Industrial Residual
South Africa	1.58	1.55	NA	.75	31.34	4.76	4.14	3.32	2.30	103.48
Tunisia	2.17	NA	.78	.66	17.14	1.65	NA	NA	.39	16.38
ASIA-PACIFIC										
Australia	2.68	1.26	NA	NA	NA	1.51	1.23	NA	NA	NA
Burma	.45	.32	.24	.32	NA	—	—	—	—	—
Indonesia	—	—	—	—	—	1.55	.72	.85	.47	32.53
Japan	2.84	1.83	1.84	1.32	39.75	2.37	1.32	1.34	.94	34.40
New Zealand	1.76	1.35	1.38	NA	36.84	—	—	—	—	—
Pakistan	1.83	1.01	NA	.78	NA	NA	NA	NA	NA	19.46
Philippines	1.47	1.14	.82	1.15	NA	NA	NA	NA	NA	NA
Singapore	2.17	.99	.71	1.01	NA	2.08	.81	.86	.82	NA
Sri Lanka	1.86	1.12	NA	.91	27.29	2.23	.98	1.27	.77	27.15
Thailand	1.66	.95	.51	.88	21.39	1.62	.78	.93	.69	10.22

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*Unleaded regular grade in U.S. and Canada; leaded premium in all other countries.

**Excludes taxes; all other countries include taxes in distillate, kerosine and resid prices.

Source: International Energy Annual, 1985, published fall 1986; Gasoline and fuel oil prices are for the capital cities of each country except those of the U.S., which are the national average for the months and years quoted.

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Slippage Continues for Outlets

The U.S. service station population, which has been taking an almost incredible beating over the past decade, is in the process of eroding to the lowest point it has been since the 1920s. Government forecasts indicate it will be there by the end of this year.

But all is not gloom and doom, however. Even though the nose count is down for the 14th consecutive year, the real world out there is far more exciting and enriching for gasoline marketers than at other comparable periods of the past.

The federal government's "Franchising in the Economy 1985-1987," reports that the service station population had declined to 120,150 units at the end of 1986 and will slip further to 117,000 by the end of this year. This is an erosion of 2.6% between 1987 and 1986, and 3.6% between 1986 and 1985.

Remembering that the peak period—226,500 stations in 1972—isn't really that far into the past, the latest set of figures almost makes it sound as though the service station segment is approaching the point where it will one day vanish from the domestic scene.

Nothing could be further from the truth, however.

First off, it should be noted that the service stations involved in this January 1987 federal report are known as "true service stations," i.e., those that generate more than half of their revenues from gasoline and oil products.

This count does not include the thousands of gasoline-dispensing facilities at convenience stores, mass merchandisers and other such places. If these are added in, the correct total of places where motorists can buy gasoline would have to be in the neighborhood of 150,000 to 160,000 outlets.

Nevertheless, this is a near traumatic reduction in the service station population over the past 15 years. Simple mathematics show that the retail world has been almost cut in half since 1972—117,000 stations at the end of 1987 versus 226,000 on Dec. 31, 1972.

Modern service stations are bigger, better and much more capable of handling the greatly increased number of vehicles, however, as well as generating dollar and gasoline volumes 50 times greater than their Depression Era predecessors.

The latest federal estimate says modern service station sales should have hit $90.4-billion last year and should rise to $95-billion this year. Several years ago, when crude ranged up to $35 bbl. and gasoline prices were $1-plus gal., service station grosses topped $110-billion. Even with today's depressed pump prices, the federal government estimates that U.S. service stations will average $811,174 in sales this year, an increase of 7.8% over 1986.

Some forecasters think the service station population will sink to about 100,000 or so outlets by 1990. This would not be surprising because there are many "small" stations that are finding it increasingly difficult to stay alive on the sale of gasoline and services only. Even some big pumpers are experiencing that same problem—that survival requires more than volume and 24-hour operations.

The tendency to supplement stations with convenience store facilities—is growing evidence of that need. It's not unrealistic to think that by the year 2000, gasoline stations may be the core of shopping malls in their own right.

The Outlook for 1987: Outlets Down, Dollars Up

	1987	1986	1985	% Change 1987-86	% Change 1986-85
Number of establishments (a)	117,000	120,150	124,600	(2.6%)	(3.6%)
Company-owned	21,060	21,627	22,428	—	—
Franchisee-owned	95,240	98,523	102,172	—	—
Total sales of products and services ($000,000)	$94,907	90,388	100,767	5.0	(10.3)
Company-owned	$17,083	16,270	18,138	—	—
Franchisee-owned	$77,824	74,118	82,629	—	—
Average per station	$811,080	752,000	808,000	7.8	(7.0)
No. of employees	NA	NA	892,900	—	—

(a) As of Dec. 31 of each year; service stations as defined by U.S. Census Bureau, i.e., stations with 50% or more of their income being derived from the sale of gasoline and oil products.
Source: "Franchising in the Economy, 1985-87," U.S. Department of Commerce, February 1987.

Comparable U.S. Census Bureau Data (a)

	[illegible]	[illegible]	[illegible]	% Chng. '82 v. '77	% Chng. '82 v. '72
No. of stations [illegible]	[illegible]	[illegible]	[illegible]	−21.9%	−18.5%
Total [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	71.0
Average [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	112.[illegible]
No. of [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	−18.[illegible]

(a) Census [illegible] of the population in 1972 and 80% of the population in 1977. A new Census is being made this year (1987).
(b) Stations are those which, by Census Bureau definition, generate 50% or more of their sales dollars from gasoline.
Source: U.S. [illegible]

The Rise and Fall of U.S. Service Stations

Year	No. of Stations (a) Total	No. of Stations (a) Company-owned	No. of Stations (a) Franchisee-owned	Sales ($000,000) Total	Sales ($000,000) Company-owned	Sales ($000,000) Franchisee-owned
1987	117,000	21,060	95,240	$94,907	$17,803	$77,824
1986	120,150	21,627	98,523	90,388	16,270	74,118
1985	124,600	22,428	102,172	100,492	18,089	82,403
1984	132,080	23,774	108,306	100,767	18,138	82,629
1983	136,570	24,583	111,987	103,121	18,561	84,560
1982	144,690	26,044	118,646	106,544	19,178	87,366
1981	151,250	27,225	124,025	105,145	18,926	89,219
1980	158,540	30,122	128,418	96,338	18,304	78,034
1979	164,780	31,310	133,480	71,894	13,660	58,234
1978	172,300	32,737	139,563	60,884	12,177	48,707
1977	176,465	33,375	141,160	58,231	11,646	46,585
1976	186,840	37,368	149,472	53,416	10,683	42,733
1975	189,480	37,896	151,584	47,387	9,477	37,910
1974	196,130	39,226	156,904	43,829	8,766	35,063
1973	215,880	47,176	172,704	37,666	7,533	30,183
1972(b)	226,459	44,200	176,259	33,656	6,812	26,844

(a) As defined by U.S. Census Bureau, stations with 50% or more of their income from petroleum product sales; (b) Peak year for stations.
Source: "Franchising in the Economy, 1985-1987," U.S. Department of Commerce, February, 1987.

Service Stations With Payrolls—Populations by States 1987 vs. 1982(a)

The service station population totals on this page are based on more limited data than had been used in earlier *NPN Factbooks* and are projections by *NPN* rather than by government sources. The change was necessitated by the fact that the U.S. Census Bureau inadvertently limited its 1982 Census Study to stations with payrolls, thereby omitting all of the very small stations without formal payrolls. The stations with payrolls reflect about 85% to 90% of the industry as it is now constituted. Bear in mind also that these stations are true service stations, i.e., stations which get more than half of their revenues from gasoline sales. The totals do not include convenience stores and other places that sell gasoline as a secondary product.

	Total Gasoline Service Stations				Total Sales (add 000)			
	1987(a)	1986(a)	1985(a)	1982(b)	1987(a)	1986(a)	1985(a)	1982(b)
Alabama	1,617	1,660	1,722	2,001	1,405,901	1,338,954	1,213,425	1,172,677
Alaska	142	146	152	176	246,851	235,096	213,056	205,901
Arizona	973	999	1,036	1,204	1,566,217	1,491,635	1,351,793	1,306,398
Arkansas	983	1,009	1,047	1,216	919,047	875,283	793,224	766,587
California	8,585	8,814	9,145	10,624	12,614,557	12,013,863	10,887,549	10,521,934
Colorado	1,269	1,302	1,351	1,570	1,713,962	1,632,345	1,479,311	1,429,634
Connecticut	1,395	1,432	1,486	1,726	1,733,782	1,651,221	1,496,417	1,446,166
Delaware	242	249	258	300	318,340	303,181	274,758	265,531
D.C.	128	131	136	158	215,844	205,566	186,294	180,038
Florida	4,448	4,566	4,738	5,504	5,729,371	5,456,543	4,944,986	4,778,928
Georgia	2,487	2,553	2,649	3,077	2,856,587	2,720,559	2,465,503	2,382,709
Hawaii	297	304	316	367	486,823	463,641	420,174	406,064
Idaho	399	410	425	494	423,126	402,977	365,198	352,934
Illinois	4,147	4,258	4,418	5,132	5,503,521	5,241,448	4,750,056	4,590,544
Indiana	2,559	2,627	2,726	3,167	3,268,721	3,113,067	2,821,213	2,726,474
Iowa	1,668	1,712	1,777	2,064	1,648,058	1,569,578	1,422,429	1,374,662
Kansas	1,221	1,254	1,301	1,511	1,279,840	1,218,895	1,104,622	1,067,528
Kentucky	1,712	1,758	1,824	2,119	1,862,035	1,773,367	1,607,111	1,553,143
Louisiana	1,594	1,636	1,697	1,972	1,840,082	1,752,459	1,588,164	1,534,832
Maine	517	531	551	640	461,855	439,862	398,624	385,238
Maryland	1,517	1,557	1,616	1,877	2,397,371	2,283,210	2,069,156	1,999,672
Massachusetts	2,394	2,457	2,550	2,962	2,779,275	2,646,928	2,398,775	2,318,222
Michigan	3,337	3,426	3,555	4,130	4,786,346	4,558,424	4,131,066	3,992,341
Minnesota	1,800	1,848	1,918	2,228	2,450,835	2,334,128	2,115,301	2,044,267
Mississippi	962	988	1,025	1,191	823,498	784,283	710,756	686,888
Missouri	2,379	2,442	2,534	2,944	2,671,689	2,544,466	2,305,919	2,228,484
Montana	427	438	455	528	478,880	456,076	413,319	399,439
Nebraska	912	937	972	1,129	891,031	848,601	769,043	743,218
Nevada	385	395	410	476	676,497	644,283	583,880	564,273
New Hampshire	442	454	471	547	478,920	456,114	413,353	399,472
New Jersey	3,359	3,449	3,578	4,157	3,782,255	3,602,147	3,264,441	3,154,818
New Mexico	630	647	671	780	774,417	737,540	668,394	645,949
New York	5,114	5,250	5,447	6,328	5,280,343	5,028,897	4,557,432	4,404,389
North Carolina	2,464	2,529	2,625	3,049	2,273,200	2,164,952	1,961,985	1,896,100
North Dakota	341	350	363	422	434,805	414,100	375,277	362,675
Ohio	4,771	4,898	5,082	5,904	6,358,449	6,055,666	5,487,940	5,303,649
Oklahoma	1,292	1,327	1,376	1,599	1,365,437	1,300,416	1,178,500	1,138,925
Oregon	1,206	1,238	1,284	1,492	1 327,788	1,264,560	1,146,006	1,107,522
Pennsylvania	4,672	4,796	4,976	5,781	5,126,085	4,881,985	4,424,293	4,275,721
Rhode Island	416	427	443	515	443,701	422,573	382,956	370,096
South Carolina	1,346	1,382	1,434	1,666	1,436,383	1,367,984	1,239,734	1,1[illegible],102
South Dakota	431	442	459	533	427,707	407,34[illegible]	369,151	356,755
Tennessee	2,012	2,066	2,143	2,490	2,347,037	2,235,273	2,025,714	1,957,688
Texas	6,637	6,814	7,070	8,213	7,881,788	7,506,465	6,802,724	6,574,282
Utah	680	699	725	842	788,020	750,496	680,136	657,296
Vermont	290	298	309	359	260,612	248,202	224,932	217,379
Virginia	2,143	2,200	2,283	2,652	2,949,575	2,809,118	2,545,760	2,460,271
Washington	1,734	1,780	1,847	2,146	2,034,550	1,937,666	1,756,008	1,697,039
West Virginia	857	880	913	1,061	850,145	809,662	733,755	709,115
Wisconsin	2,183	2,241	2,325	2,701	2,529,177	2,408,740	2,182,918	2,109,613
Wyoming	347	357	370	430	477,696	455,139	412,469	398,618
Total	**93,864**	**96,361**	**99,985**	**116,154**	**113,678,231**	**108,264,974**	**98,115,003**	**94,820,200**

(a) Projected by *NPN* on the basis of Census Bureau and other Commerce Department data. However, as noted above, these data are for stations with payrolls—not the "universe" which the *Factbook* published in prior years. These stations, by Census Bureau definition, are those which generate more than half of their sales dollars through the sale of gasoline and oil products.

(b) U.S. Census Bureau, Retail Trades Census, 1982, published in November 1984.

Gasoline Shares by Key Categories—1986

In 1985, a new study on the retail gasoline market was completed by MPSI Americas, Inc., Tulsa, Olka., a firm specializing in international computer software and information services as well as market research and planning. Now, MPSI has released its updated study covering the year 1986.

Presented with the data on regional and national market shares for 1986 (see table below) are the data for 1985. This comparison offers indications of the trends within the various marketing segments.

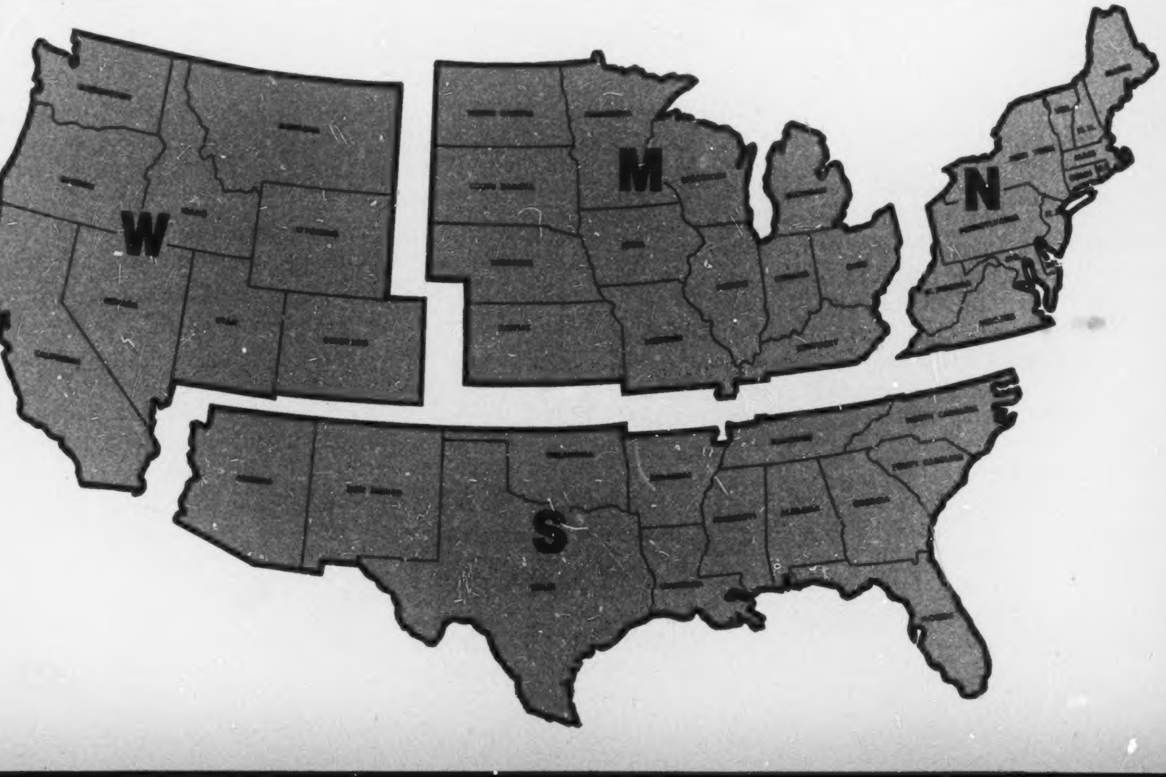
The study breaks out, on both a national and regional basis, market shares and percentage of outlets for conventional service stations, volume pumpers, convenience stores that sell gasoline, plus a catch-all category of "others" including car washes, garages and other facilities.

This study involves primarily the metropolitan areas of the U.S., where most gasoline is marketed. No attempt was made to count rural vendors or highway units which, while important to the industry, do not add materially to overall consumption.

Regional and National Market Shares

	Service Stations		Pumpers		Convenience Food Stores		Others		Total	
	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985
Northeastern Region										
• % of Outlets	59.0	60.1	24.4	23.9	4.6	5.1	12.0	10.9	100.0	100.0
• % of Volume	53.5	57.6	40.9	37.5	2.7	2.2	2.9	2.7	100.0	100.0
• Avg. Monthly Volume (Gallons)	63,338	71,433	124,551	116,951	35,488	32,958	16,295	18,257	70,972	72,035
Midwestern Region										
• % of Outlets	41.3	43.5	36.8	34.4	8.7	6.7	13.2	15.4	100.0	100.0
• % of Volume	33.4	35.5	56.3	54.7	5.9	4.5	4.4	5.4	100.0	100.0
• Avg. Monthly Volume (Gallons)	54,003	52,132	102,147	101,705	45,347	42,183	22,466	22,455	66,806	63,918
Sunbelt Region										
• % of Outlets	30.8	31.3	29.9	28.9	27.1	26.9	12.2	12.9	100.0	100.0
• % of Volume	31.1	30.6	52.7	51.9	12.5	13.2	3.7	4.3	100.0	100.0
• Avg. Monthly Volume (Gallons)	57,355	58,688	104,728	107,728	27,118	29,487	17,642	19,599	57,107	59,927
Western Region										
• % of Outlets	54.1	54.4	29.9	28.5	6.7	7.3	9.3	9.8	100.0	100.0
• % of Volume	45.1	46.4	47.8	46.9	4.3	3.5	2.8	3.2	100.0	100.0
• Avg. Monthly Volume (Gallons)	56,009	57,335	112,000	110,836	33,931	32,549	20,782	21,011	63,558	67,187
Total United States										
• % of Outlets	46.0	46.2	29.3	28.5	13.0	13.2	11.4	12.1	100.0	100.0
• % of Volume	41.6	42.9	48.4	47.1	6.6	6.3	3.4	3.7	100.0	100.0
• Avg. Monthly Volume (Gallons)	57,465	61,295	111,554	109,152	31,777	31,356	18,512	20,199	63,957	66,012

Source: MPSI Americas, Inc., Tulsa, Oklahoma.

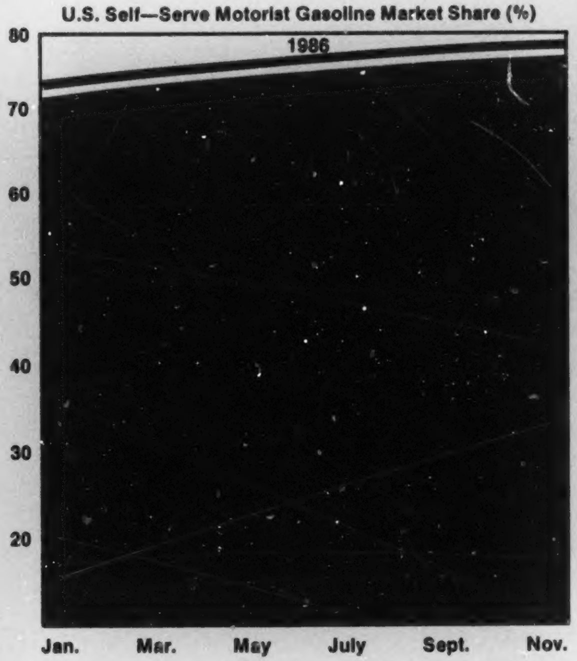


Self Serve Up More

Self-serve grabbed an even larger share of the U.S. gasoline market in 1986, continuing an upward trend of the last 12 years. According to Amoco Oil Co.'s latest opinion poll, American motorists pumped their own gasoline at the record pace of 78% of U.S. gasoline sales in 1986, up 2% from the previous year.

The satisfaction poll is made monthly by Amoco.

U.S. Self—Serve Motorist Gasoline Market Share (%)



State (a)	'86	'85	State (a)	'86	'85
Alabama	80%	78%	Montana	89%	86%
Arizona	90	90	Nebraska	78	78
Arkansas	83	81	Nevada	87	86
California	89	87	New Hampshire	65	64
Colorado	91	91	New Mexico	87	88
Connecticut	69	65	New York	56	54
Delaware	82	82	North Carolina	85	85
District of Col.	80	82	North Dakota	76	79
Florida	89	87	Ohio	83	81
Georgia	85	83	Oklahoma	85	85
Idaho	89	86	Pennsylvania	64	61
Illinois	87	86	Rhode Island	66	66
Indiana	86	86	South Carolina	87	86
Iowa	83	81	South Dakota	80	79
Kansas	82	78	Tennessee	83	81
Kentucky	78	76	Texas	91	90
Louisiana	88	88	Utah	93	95
Maine	56	44	Vermont	56	53
Maryland	84	84	Virginia	88	86
Massachusetts	50	47	Washington	90	89
Michigan	85	83	West Virginia	74	72
Minnesota	81	81	Wisconsin	89	87
Mississippi	82	76	Wyoming	84	86
Missouri	82	82			

(a) Self-Service is illegal in New Jersey and Oregon.
Source: Amoco Oil, Monthly Survey.

A Service Station Wash That's Designed For the Job From the Ground Up

BUBBLE WASH

A complete vehicle-wash system designed specifically for service-station profit improvement—not a slow, capital-intensive roll-over; not a problem-prone, cut-down version of a conveyorized carwash.

Service-Station Features

The N/S CTV-90B thoroughly washes cars, vans, and small trucks with a soft bubble bath enhanced by brush and curtain action to attract a wide range of customers to your stations and keep them coming back. The wash is fully automatic (no operator is required), it is very inexpensive to operate, and it easily washes 50 vehicles per hour so traffic moves smoothly, even during peak hours.

Also, the N/S CTV-90B features safety for both system and vehicles, while the equipment is virtually maintenance-free and so reliable that down time is negligible. The entire system fits in a bay as small as 13 by 20 feet.

Proven In Use

CTV-90B's are building volume and improving profits in service stations across the country:

Olympus Oil Company installed a CTV-90B in Salt Lake City and offered a free wash with purchase of 8 gallons. During the first two months, gas sales increased by $20,000 a month, monthly C-store sales increased by $2,000, and vehicle-wash-only sales averaged $600 a month. Yet, Olympus figures that washing a vehicle costs only 7 cents.

In Puerto Rico, Isla Oil Company sells washes for $1 at its stations in Trujillo Alto and Bayamon, and sales are running $2,000 and $3,000 a month respectively.

More Information

To explore the possibilities for profit improvement at your locations (without obligation, of course), simply contact N/S.

A complete line of options is available, including water reclamation.

N/S

N/S Corporation
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Business at Service Stations

Dollar Volume and Product Sales

					Gasoline		Motor oil	
Year	No. of service stations	Total sales (add 000,000,000)	Avg. per station (add 000)	Passenger cars (add 000)	Avg. gal.	Sales (000,000 gal.)	Qts. per year	Sales (add 000,000 qt.)
1986(b)	120,150(a)	$ 90.4	$752.4	135,671	550	74,619	—	—
1985	124,600(a)	100.8	809.0	132,108	549	75,527	—	—
1984	132,080(a)	101.0	764.7	128,270	553	70,933	—	—
1983	136,570(a)	103.1	755.1	126,727	578	72,922	—	—
1982	144,690(a)	106.2	733.0	123,746	587	72,638	7.3	907
1981	151,250(a)	101.7	672.4	123,462	579	71,484	7.3	909
1980	158,540(a)	96.3	608.0	121,723	603	73,399	7.3	907
1979	164,790(a)	70.9	430.0	120,248	664	79,845	7.3	880
1978	172,300(a)	60.9	353.0	116,534	715	83,760	7.6	921
1977	176,465(b)	56.5	320.0	113,696	706	80,269	7.9	900
1976	186,400(a)	48.0	257.0	110,188	711	78,344	8.0	887
1975	189,480(a)	43.8	232.0	106,712	712	75,979	9.5	1,014
1972(c)	226,459(a)	33.7	148.8	96,567	755	72,908	10.0	966

(a) Franchising in the Economy 1985-87. Department of Commerce; Bureau of Census definition of service stations: 50% or more of dollar volume comes from the sale of petroleum products; (b) Estimated by *NPN* and other source; (c) Peak year.

Station Customers

		Privately owned passenger cars		Households owning cars		Licensed drivers		Women drivers	
Year	No. of service stations	Total (add 000)	Avg. per station	Total (add 000,000)	Avg. per station	Total (add 000,000)	Avg. per station	Total (add 000,000)	Avg. per station
1986(b)	**120,150(a)**	**135,671**	**1,129**	**76.0**	**633**	**158.6**	**1,320**	**76.1**	**633**
1985	124,600(a)	132,108	1,060	75.0	602	156.9	1,259	75.3	604
1984	132,080(a)	128,270	971	74.0	560	155.4	1,176	74.3	562
1983	136,570(a)	126,727	927	73.0	534	154.2	1,129	73.4	537
1982	144,690(a)	123,746	855	72.0	497	150.3	1,038	71.7	491
1981	151,250(a)	123,462	816	70.0	460	147.0	969	69.2	457
1980	158,540(a)	121,723	767	67.2	423	145.3	916	68.1	429
1979	164,790(a)	120,248	731	65.9	400	143.3	868	66.8	403
1978	172,300(a)	116,534	676	64.6	375	140.8	817	65.3	379
1977	176,465(a)	113,696	644	63.3	365	138.4	784	63.7	361
1976	186,400(a)	110,188	591	62.0	332	130.3	689	57.9	306
1975	189,480(a)	106,712	563	60.5	319	127.8	662	56.8	294
1972	226,459(c)	96,567	426	52.8	232	118.4	522	52.6	232

(a) Franchising in the Economy 1985-87, Department of Commerce; Bureau of Census definition of service stations: 50% or more of dollar volume comes from the sale of petroleum products; (b) Estimates by *NPN* and others; (c) Peak year.

Source: Based on data from Motor Vehicle Mfgs. Assn., Federal Highway Administration, and *NPN*.

How Stations Rank in Sales (Billions of Dollars)

	1986	% Change '86-'85	1985	% Change '85-'84	1984	% Change '84-'83	1983	% Change '83-'82
All Retail Stores	1,445.4	5.2%	1,373.9	6.2%	1,293.0	10.1%	1,174.3	9.2%
Automotive Group	337.1	7.8	312.8	12.3	278.5	19.6	232.8	27.5
Food Group	293.9	3.9	282.2	4.5	270.4	6.1	254.9	2.2
General Merchandise	165.6	3.9	159.4	4.3	152.9	9.7	139.4	5.1
Eating and Drinking Places	141.4	7.9	131.0	5.2	124.5	8.5	114.7	9.6
Gasoline Service Stations	**86.4**	**(14.3)**	**100.8**	**1.4**	**99.4**	**0.5**	**98.9**	**(4.4)**
Apparel Group	75.0	7.6	69.7	7.1	65.1	8.0	60.3	17.3

Source: Survey of Current Business, Department of Commerce, Vol. 67, No. 1, January 1987.

Personal Consumption Expenditures

	(Billions of Dollars)					Seasonally Adjusted at Annual Rate—1986			
	1986	% Change '86-'85	1985	% Change '85-'84	1984	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Total Expenditures	$2,762.4	6.2%	$2,600.5	3.2%	$2,423.0	$2,697.9	$2,732.0	$2,799.8	$2,819.9
Durable Goods	388.3	8.0	359.3	8.5	331.1	360.8	373.9	414.5	404.2
Automobiles	182.3	7.7	169.2	10.0	153.8	163.5	172.0	204.7	189.0
Furniture	137.0	8.0	126.8	6.2	119.4	132.1	135.8	140.0	140.2
Other Durable	69.0	9.0	63.3	9.3	57.9	65.3	66.0	69.8	75.0
Nondurable Goods	932.7	3.0	905.1	3.7	872.4	929.7	928.4	932.8	940.0
Food	492.8	5.0	469.3	3.9	451.7	484.6	490.3	494.0	502.2
Clothing and Dress	164.8	6.2	155.2	5.3	147.4	161.3	165.0	166.6	166.2
Gasoline and Oil	**78.7**	**(14.4)**	**91.9**	**1.3**	**90.7**	**87.6**	**78.1**	**74.2**	**74.9**
Other Nondurable Goods	196.5	4.1	188.7	3.3	182.6	196.2	194.9	198.0	196.7
Fuel Oil and Coal	14.0	(10.8)	15.7	(12.3)	17.9	14.9	13.7	13.7	13.5
Other Nondurable	182.5	5.5	172.9	5.0	164.7	181.3	181.2	184.3	183.2
Services	1,441.3	7.9	1,336.1	9.5	1,219.6	1,407.4	1,429.8	1,452.4	1,475.7

Source: Survey of Current Business, Department of Commerce, Vol. 67, No. 1, January 1987.

Retail Rankings: The Reshuffling Continues

The merger mania of the past few years (Chevron-Gulf, Texaco-Getty) subsided last year, but there were some notable shifts in the major company rankings of station outlets in 1986, nonetheless.

Chevron, which had jumped from the No. 6 place in the retail rankings in 1984 to No. 2 in 1985 with its acquisition of Gulf properties, was required by law to unbundle a number of its Southeast outlets last year. Thus, it tumbled to No. 3 in the retail pecking order in 1986.

Last year, Texaco kept a firm grip on the top rung of the retail ranking order, actually increasing its station count by 221. Texaco also marketed in the most states in 1986, a total of 46. Shell was second with 41 states.

While some majors are trimming back their retail networks, a few aggressive young second tier companies are adding stations and expanding into new markets. Gulf Oil, the Cumberland Farms division, has moved into the 14th slot with over 4,000 units. Getty, a new listing this year, expanded from 1,553 outlets in 1985 to 2,191 in 1986, a gain of over 600 stations.

		Outlets	*1985*
1	**Texaco**	18,939	(1)
2	**Exxon**	14,468	(3)
3	**Chevron**	13,879	(2)
4	**Mobil**	12,619	(5)
5	**Amoco**	12,337	(4)
6	**Shell**	11,133	(6)
7	**Phillips**	10,669	(8)
8	**Unocal**	10,633	(7)
9	**Standard Oil (Ohio)**	7,623	(9)
10	**Citgo**	7,296	(10)
11	**Conoco**	6,860	(11)
12	**Sun**	5,662	(12)
13	**American Petrofina**	4,209	(13)
14	**Gulf Oil**	4,180	—(a)
15	**Sinclair**	2,479	—(a)
16	**Marathon**	2,395	(14)
17	**Getty**	2,191	—(a)
18	**Diamond Shamrock**	2,016	(15)
19	**Kerr-McGee**	1,960	(17)
20	**Total**	1,915	—(a)
21	**Arco**	1,719	(18)

(a) Not ranked in last year's top 21 listing.

	Number of States*		**Branded retail outlets**	
	'86	**'85**	**'86**	**'85**
American Petrofina	24	24	4,209	4,385
Amoco	30	36	12,337	15,077
Arco	6	6	1,719	1,748
Chevron	33	43	13,879	18,645
Citgo	39	39	7,296	6,370
Conoco	40	38	6,860	6,276
Diamond Shamrock	12	12	2,016	2,034
Exxon	37	39	14,468	17,427
Getty	11	11	2,191	1,553
Gulf Oil	11	—(a)	4,180	—(a)
Kerr-McGee	22	20	1,960	1,879
Marathon	6	6	2,395	2,361
Mobil	40	40	12,619	13,310
Phillips	37	34	10,669	10,505
Shell	41	40	11,133	11,129
Sinclair	24	—(a)	2,479	—(a)
Standard Oil (Ohio)	29	19	7,623	7,930
Sun	29	29	5,662	5,830
Texaco	46	47	18,939	18,718
Total	19	21	1,915	1,942
Unocal	41	41	10,633	10,763

Source: *NPN* Questionnaires
*Includes District of Columbia
(a) Not ranked in last year's top 21 listing.

34 Oil Company Credit Cards in the U.S.—1986

(Add 000 in all categories)

Company	Active Accounts	Total Proprietary Cards	Proprietary Sales Volume	Bank Card Sales Volume	T&E Sales Volume	Total Credit Sales
Shell	4,800	15,000	$2,700,000	$324,000	—	$3,024,000
Amoco	4,300	16,700	2,600,000	319,600	$194,000	3,113,600
Chevron	3,900	16,200	2,900,000	244,000	New	3,145,000
Mobil	3,300	14,000	2,000,000	245,000	New	2,245,000
Texaco	3,100	13,500	2,458,400	353,000	175,000	3,986,400
Exxon	3,000	11,200	2,000,000	194,000	—	2,200,000
Unocal	2,200	7,000	2,050,000	220,000	45,000	2,318,000
Sohio	2,000	5,000	1,132,000	100,000	—	1,232,000
Phillips	1,000	4,500	700,000	135,000	—	837,000
Sunoco	1,000	4,200	725,000	81,000	4,000	810,000
Citgo	590	2,600	231,000	96,000	—	327,000
Cumberland	525	1,200	226,000	27,000	—	253,000
Diamond	320	1,100	260,000	46,000	3,000	310,000
Conoco	300	1,700	200,000	50,000	—	250,000
Marathon	250	1,200	180,000	13,000	—	193,000
Fina	170	650	130,000	6,500	New	136,900
Total	170	945	145,000	81,500	—	227,000
Kerr McGee	113	564	57,000	15,000	—	72,600
Ashland	80	165	78,000	42,000	—	126,000
Crown Central	80	175	36,000	34,000	—	72,000
Beacon	65	272	40,000	2,000	—	42,000
Sinclair	50	171	28,200	3,600	—	31,975
Tenneco	44	137	28,000	20,000	—	48,500
Derby	34	242	23,500	8,900	—	32,488
Cenex	26	207	14,300	New	—	14,300
Emro	9	44	24,000	12,000	—	36,000
Kent	6	23	2,600	New	New	2,600
Sing	5	14	3,900	4,000	—	7,960
Canal	3	9	1,400	—	—	1,400
Certified	4	8	2,000	—	—	2,000
Gibble	2	10	2,400	—	—	2,400
Kwik-Fill	2	5	30,000	New	—	30,000
MFA	2	5	1,800	2,500	—	4,300
Tesoro	2	6	1,700	—	—	1,700
Totals (top 20)	**31,198**	**149,299**	**20,808,400**	**2,576,650**	**421,000**	**24,748,500**
Totals (next 14)	**254**	**1,016**	**203,800**	**53,000**	**—**	**329,623**
Grand total Top 34 Companies	**31,452**	**118,752**	**$21,012,200**	**$2,679,600**	**$421,000**	**$24,136,123**

Source: The Nilson Report, May 1987.

Texaco Takes Top Spot in Card Sales, Amoco Leads in Card Accounts

Oil company credit card sales volume dropped between 1985 and 1986, probably reflecting lower oil prices, according to The Nilson Report, a newsletter for credit card executives in the oil and other industries.

The Report shows that oil company proprietary credit card sales, which account for 43% of consumer purchases at gasoline stations, fell from $26-billion in 1985 to $21-billion last year. Total oil company credit card sales, which includes bank cards, travel and expense cards (American Express, Diners Club, Carte Blanche, etc.), Discover and Choice cards in addition to proprietary cards, declined from $28.8-billion in 1985 to $24.1-billion last year.

According to the Report, Texaco had the highest total credit card volume of all the majors, $3.99-billion. This was, however, slightly lower than the $4.26-billion in 1985. Chevron was second, with $3.15-billion, and Amoco third, with $3.11-billion.

The Report, which includes credit card information on 34 oil companies (six more than its last oil industry update), also provides data on: oil company active accounts, number of proprietary and other credit cards in use, credit card losses, outstanding debt, credit card spending, number of transactions and other pertinent consumer and industry credit card information. This latest report appeared in May, 1987.

The Nilson Report is published monthly, but has no set schedule for updating its oil industry data. It can be obtained from the Nilson Report, P.O. Box 49936 (Barrington Station), Los Angeles, Calif. 90049, or calling 213-392-8478.

C-Store Sales, Margins on Upswing

Is the phenomenal growth of the convenience store industry nearing the saturation point, as some observers seem to think? Not according to the latest survey data of the National Assn. of Convenience Stores and other industry sources.

After a relatively modest increase (9.7%) in total C-store sales in the 1983-1984 period, the industry came back with a strong 14.1% increase in sales in 1985, according to the NACS 1986 "State of the Convenience Store Industry" survey. The nation's 61,000 C-stores (up 3,700) accounted for $54.2 billion in sales in the last reported year. Slightly less than half of this increase came from adding new stores, NACS pointed out.

C-store gasoline sales rose by 11.7% to $18.2 billion, the survey reported. Gasoline continues to account for about one third of all C-store dollar volume. Gross profit margins were healthier, too, for both gasoline and non-gasoline sales, NACS says (See table below).

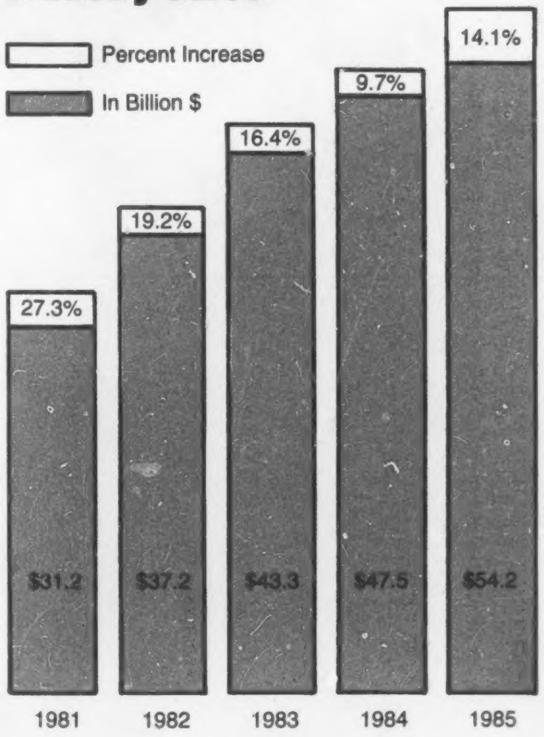
The average store had a pre-tax profit of $24,000 in 1985, down slightly from 1984. However, pre-tax profits were considerably higher than in 1982 ($14,500) and 1983 ($17,500). Additional C-store profit data is shown on p134.

C-store Gross Margin As a Percent of Sales

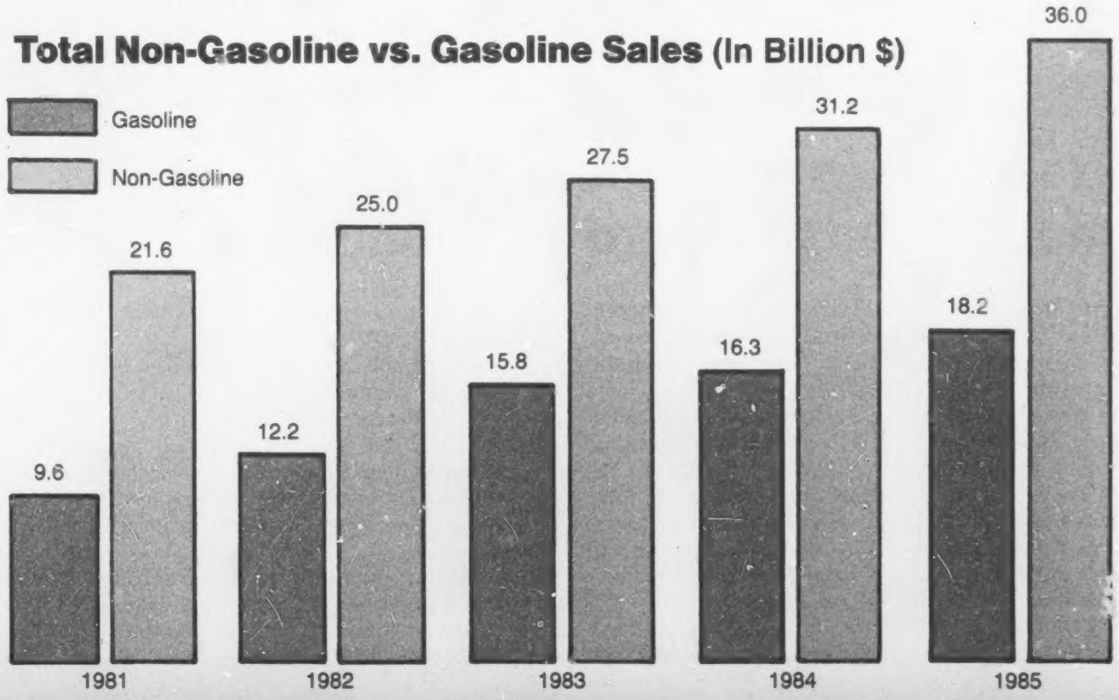
Survey Year	Gasoline Margin %	Non-Gasoline Margin %	Average Margin %
1985	7.3	32.2	22.8
1984	6.0	32.0	21.6
1983	5.0	31.5	20.7
1982	4.5	30.1	20.8
1981	4.2	31.8	22.9

Source: NACS "1986 State of the Convenience Store Industry" survey.

Total Convenience Store Industry Sales



Total Non-Gasoline vs. Gasoline Sales (In Billion $)



C-store Profile Includes New P&L Data

For the first time, the 1986 NACS "State of the Convenience Store Industry" study presented summarized profit and loss information for typical C-stores. This new data is broken out by company size (See table below right). Also shown is updated information on the average investment required for new C-stores (See table at bottom of page).

Another perspective on C-stores operations is provided by the "State of the Industry" surveys conducted by Convenience Store Merchandiser, an industry publication. These surveys chart C-store activity according to independent operations (single stores, including franchisees) and chain outlets.

In addition to the sales and margin data shown here, information included in the magazine's surveys showed average inventory turns in 1986 of 15.4 for chains and 13.3 for independents, both improvements over the previous year. Pre-tax profits as a percentage of gross sales was 5.0% for chains and 5.98% for independents.

Comparing Chain C-store Product Categories

Product Category	Average Gross Profit Margin	Percent of In-Store Sales: Chains Selling Gasoline	Percent of In-Store Sales: Chains Not Selling Gasoline
Gasoline	7.7%	—	—
Automotive Supplies	33.1	2.2%	.1%
Tobacco	24.1	17.7	9.3
Beer & Wine	26.5	13.9	9.4
Cooler Soft Drinks	31.6	12.1	9.5
Fountain Soft Drinks	56.1	2.8	2.1
Fast Foods/Food Service	45.5	4.5	4.0
Deli	43.2	5.4	7.0
Milk & Dairy	17.9	5.4	5.9
Bake Off	37.5	.4	2.6
Ice Cream	31.4	1.8	1.3
Groceries	29.4	14.3	21.0
Candy	35.9	4.5	5.7
Magazines & Paperbacks	22.3	1.1	1.5
General Merchandise	33.0	1.7	2.8
HBA	34.0	3.0	.6
Snacks	36.4	4.7	2.1
Produce	29.6	.2	1.6
Frozen Foods	29.6	.2	1.2
Video Products	13.9	.6	1.6
Lottery Tickets	5.2	1.4	.9

Source: "1986 State of the Industry Report" for independent and chain stores, *Convenience Store Merchandiser.*

Average Sales per C-store—1986

(Add 000)

	Independent Stores			Chain Stores		
	In-Store Sales	Gasoline Sales	Total Sales	In-Store Sales	Gasoline Sales	Total Sales
Sell Gasoline	$345	$536	$880	$408	$566	$974
No Gasoline	533	—	533	653	—	653
Average (All Stores)	345	536	880	467	466	932

Source: "1986 State of the Industry Report" for independent and chain stores, *Convenience Store Merchandiser.*

Average C-store Sale Per Customer—1986

	Independent Stores		Chain Stores	
	In-Store Sale	Gasoline Sale	In-Store Sale	Gasoline Sale
Sell Gasoline	$3.74	$7.03	$2.58	$7.60
No Gasoline	3.46	—	4.82	—
Average (All Stores)	3.61	7.03	2.95	7.60

Source: "1986 State of the Industry Report" for independent and chain stores, *Convenience Store Merchandiser.*

1985 Profit and Loss Information

	B(a)	C(a)	D(a)	E(a)	Average
Non-Gas. Sales.	36%	47%	51%	50%	46%
Gasoline Sales	64	53	49	50	54
Total Sales	100%	100%	100%	100%	100%
Cost of Goods Sold	83.5	80.4	79.9	74.3	77.2
Gross Profit	16.5	19.6	20.1	25.7	22.8
Direct Store Operating Expense	12.9	14.7	15.1	18.7	16.9
Store Operating Profit	3.6	4.9	5.0	7.0	5.9
Corporate G&A	(2.5)	(3.4)	(2.7)	(4.1)	(3.5)
Other Income	.6	1.0	.8	1.5	1.2
Other Expense	(.3)	(.8)	(.6)	(1.2)	(.9)
Pretax Profit	1.4%	1.7%	2.5%	3.2%	2.7%

(a) Classifications: B, 11-50 stores; C, 51-200 stores; D, 201-500 stores; E, Over 500 stores.

Source: NACS "1986 State of the Convenience Store Industry" survey.

Average Investment per New C-store

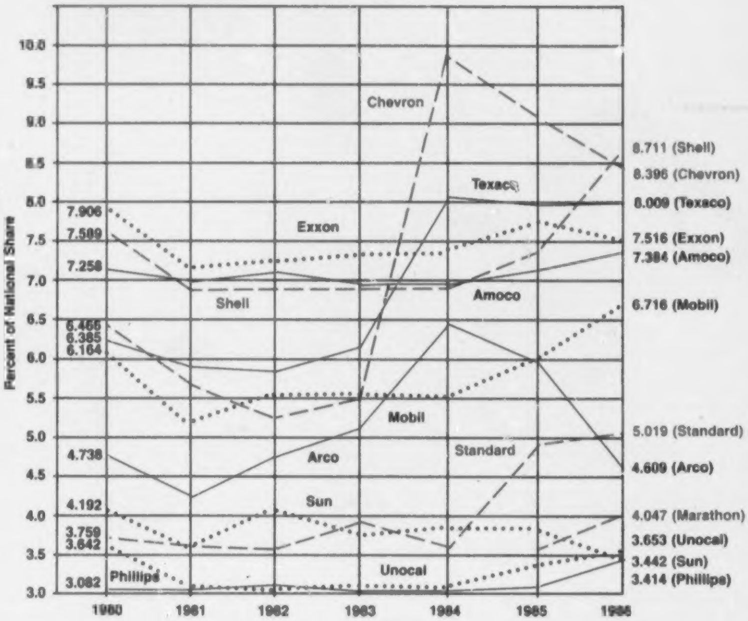
		1982		1983		1984		1985	
		Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
	Land	$133,400	$ 57,100	$147,900	$ 89,800	$170,200	$108,700	$212,800	$110,800
	Building	101,400	91,600	125,300	101,700	149,800	106,900	180,000	118,900
Equipment	Fast Food	17,900	11,000	14,200	7,700	14,100	9,100	19,900	16,200
	Gas	46,300	34,600	59,900	50,000	55,100	49,400	65,700	73,700
	Non-Gas	70,700	38,800	53,600	48,000	61,000	39,300	63,000	48,100
	Total	**134,900**	**84,400**	**127,700**	**105,700**	**130,200**	**97,800**	**148,000**	**138,000**
	Inventory	47,500	39,100	50,000	45,000	46,000	42,800	56,900	43,100
	Other	—	—	—	—	—	—	—	—
	Total Investment	**$417,200**	**$272,200**	**$450,900**	**$342,200**	**$496,200**	**$356,200**	**$597,700**	**$410,800**

Source: NACS "1986 State of the Convenience Store Industry" survey.

Shell Spurts to the Top. . .

THE BIG PICTURE

By Market Share



Shell Oil Co. spurted to the top of the pile in 1986 a..d became the nation's No. 1 marketer of gasoline. It had been fourth in 1985 but had been as high as second in prior years.

Shell, with a 20.4% increase in volume last year, vaulted over Chevron, Texaco and Exxon—in that order—in finally nailing down a title that had been sort of a will-of-the-wisp target through the years.

Probably the biggest single thing that enabled Shell to fly so high in 1986 was its acquisition of 400 service stations in the Northeast from Arco during the latter's planned withdrawal from eastern marketplaces. Virtually all of the stations were big volume outlets in prime locations.

Shell said its service stations enjoyed an 11% increase in sales in 1986, the best performance record of any of the top companies in that period. Next biggest increase, percentagewise, was Mobil with 9.9%. But Mobil's included both service stations and other sales so this is not necessarily a quid pro quo comparison.

There were two other significant changes in the line-up of the top 15 gasoline marketing companies: Standard Oil Co., formerly Sohio, moved up one notch passing fading Arco in the process, and Marathon was added to the top 15 for the first time.

In bygone years, Marathon had been rather reluctant to release its gasoline volume details so it was hard to get a good fix on where it stood nationally. Now, however, Marathon is ranked ninth based on its sales of more than 4-billion gal. of gasoline in 1986. It also inserts Marathon ahead of Unocal, Sun and Phillips.

Shell, in taking over first place, bumped Chevron which had held the leadership since its late 1983 acquisition of the old Gulf Oil Corp. At that time, Chevron made an equally spectacular leap upwards, going from fifth to first in one fell swoop.

What hurt Chevron in 1986 was the fact that it had shed 4,000 stations in the Southeast in late 1985 and about 3,000 more in the Northeast in early 1986. The southeastern stations were divested as a result of a court order in the Gulf merger and the northeastern stations were a withdrawal from a marketplace where it had only marginal interests.

The southeastern stations were sold to Standard Oil and those in the northeast to Cumberland Farms, of Canton, Mass., the big C-store chain.

Chevron's gasoline volume in 1986 declined 3.3%. It and Phillips Petroleum were the only two "losers" last year, the Bartlesville, Okla., firm reporting a 1.2%

Gross Gallonage and Relative Shares of 15 Companies—1986-85

	1986 (total sales = 109,105,160,000 gal.)				1985 (total sales = 108,876,519,000 gal.)			
	Rank	% Mkt. Shr.	(Add 000) Gallonage	% Chng. '86 vs. '85	Rank	% Mkt. Shr.	(Add 000) Gallonage	% Chng. '85 vs. '84
Shell	1	8.711%	9,504,600	20.4%	4	7.251%	7,894,500	8.0%
Chevron	2	8.396	9,160,020	(3.3)	1	8.702	9,473,940	(8.4)
Texaco	3	8.009	8,738,100	1.8	2	7.885	8,584,800	(8.8)
Exxon	4	7.516	8,200,800	—	3	7.589	8,262,870	4.9
Amoco	5	7.384	8,017,590	2.6	5	7.181	7,818,300	6.0
Mobil	6	6.716	7,327,740	9.9	6	6.125	6,668,500	12.7
Standard	7	5.019	5,475,480	3.7	8	4.914	5,350,170	(13.0)
Arco	8	4.609	5,028,210	8.3	7	4.266	4,644,990	(32.7)
Marathon	9	4.047	4,415,040	5.9	9	3.830	4,169,760	NA
Unocal	10	3.653	3,985,800	7.0	11	3.421	3,725,190	2.3
Sun	11	3.442	3,755,850	2.9	10	3.450	3,648,540	(11.5)
Phillips	12	3.414	3,725,190	(1.2)	12	3.365	3,663,870	9.6
Conoco	13	2.740	2,989,350	3.7	13	2.647	2,882,040	NA
Southland	14	1.879	2,050,000	3.5	14	1.819	1,980,000	NA
Getty	15	1.096	1,195,740	8.3	15	1.014	1,103,760	NA
Total*	—	**76.6 %**	**83,569,510**	**5.2%**	—	**73.1 %**	**79,571,230**	**(NC)**

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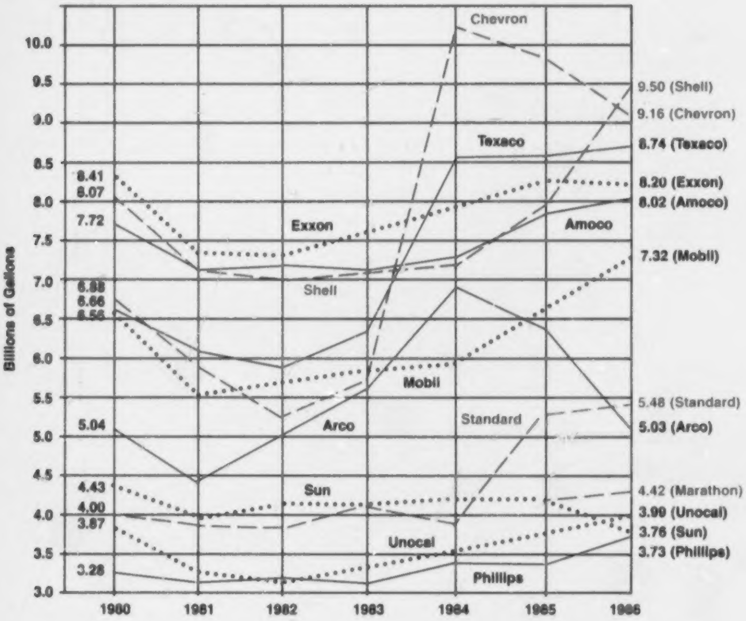
* The gross gallonage used in all four tables is that reported by the various companies in their annual reports as having been gasoline manufactured and sold by them during the calendar year to all sources, including inter-refinery sales. Some companies concede that the gasoline volumes may include small amounts of other products, such as avgas, naphtha, etc. These additions are not considered to be significant, however. (a) In connection with the 1984 and 1983 tables, Gulf was acquired by Chevron in 1984 and its gallonage was included in Chevron's for that year. Gulf is stated separately in 1983 to keep the tables in balance. Also, in the 1984 and 1983 tables, the percentage changes on an industrywide basis are not comparable because of

. . .As No. 1 Gasoline Marketer

In Billions of Gallons



decrease.

The net result of the Shell ascendency, however, is that Chevron became No. 2, Texaco No. 3 and Exxon No. 4 (See related table).

Dallas, Tex.-based Southland Corp. was added to the list of 15 this year because even though it's nominally a C-store chain it also is a major gasoline marketer and has its own refinery in Lake Charles, La., a 100,000 b/d facility that is operating at almost full speed. Its volume in 1986 was a little over 2-billion gal.

The two biggest "pure" gasoline marketers—that is those without refining facilities of their own—are Cumberland Farms and Getty Petroleum Corp. Cumberland noted that it had obtained control of the former Chevron-Gulf properties in mid-1986, thus it did not have a full year of operations under its belt by Dec. 31. A spokesman indicated, however, that earlier this year it was moving about 1.7-billion gal./year. That's rather surprising, however, because Cumberland previously had been credited with about 2.5-billion gal./year of gasoline.

Getty disclosed its gasoline sales volumes in 1985 and 1986 for the first time since it went from a five state to an 11-state marketer on the East Coast two years ago. Getty's 1986 sales were 1.2-billion gal., an increase of 8.3% over 1985. Its total product sales were over 2-billion gal. last year, a spanking 14% increase over the preceding year. Getty buys all of its product and has no refinery connection.

Cumberland, while not owning and/or operating a refinery, is about as close to it as a company could be without the formalities. Cumberland has a contract arrangement with Newfoundland Refining, Inc., under which the old Canadian refinery will be put back on stream later this summer. It is owned by an independent investor group but Cumberland is handling the crude oil purchases and has committed itself to buying all of the product—about 100,000 b/d—for its American marketplaces [NPN—Apr. '86, p27].

The gasoline volumes involved in this evaluation are those reported by the oil companies in their annual reports and ancillary financial statements. The volumes are total sales, not just those designed for highway use. Thus the totals can include highway use, inter-refinery sales and other distribution procedures. Federal Highway Administration highway consumption data for 1985 and 1986 are presented in order to provide a roundhouse estimate of this marketplace as a basis for comparisons.

Gross Gallons and Relative Shares of 12 Companies—1984-83

	1984 (total sales = 106,331,239,000 gal.)				19[illegible] (total sales = 104,2[illegible]31,000 gal.)			
	Rank	% Mkt. Shr.	(Add 000) Gallonage	% Chng. '84 vs. '83	Rank	% Mkt. Shr.	(Add 000) Gallonage	% Chng. '83 vs. '82
Chevron	1	9.732%	10,347,750	82.4%	7	5.442%	5,672,100	4.5%
Texaco	2	8.146	8,661,450	34.2	4	6.191	6,453,930	8.5
Exxon	3	7.410	7,879,620	1.8	1	7.427	7,741,650	4.8
Shell	5	6.877	7,312,410	2.6	2	6.897	7,189,770	(1.7)
Amoco	4	6.935	7,373,730	2.6	3	6.839	7,128,450	1.3
Mobil	7	5.565	5,917,380	—	8	5.427	5,656,770	13.9
Arco	6	6.487	6,898,500	22.0	5	5.677	5,917,300	2.1
Sohio	9	3.705	6,147,330	50.2	10	3.868	4,031,790	(4.4)
Sun	8	3.878	4,123,770	2.3	9	3.926	4,093,110	9.4
Unocal	10	3.345	3,556,560	2.3	12	3.336	3,476,844	6.9
Phillips	11	3.143	3,341,940	2.8	11	3.118	3,249,960	(1.9)
Gulf (a)	—	—	—	—	6	5.574	5,810,070	(4.8)
Total		**64.5 %**	**68,601,750**	**(N.C.)**		**63.73 %**	**66,424,840**	**(N.C.)**

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the various spinoffs.

Sources: Oil company annual reports and statistical supplements. The national gallonage totals for 1985, 1984 and 1983 are those of Federal Highway Administration for taxable consumption on and off-highway. The total for 1986 is an estimate by *NPN* based on FHA data and a 2.1% volume growth indicated by a variety of sources.

Share of Market—Top 20 Companies in 1985

	Production				
	Crude oil and liquid oil			Natural gas	
	(Add 000 b/d)	% of Mkt.		Millions/CF	% of Mkt.
Exxon	768.0	7.22%	Chevron	765,770	4.66%
Standard Oil	719.7	6.77	Exxon	761,025	4.63
Arco	647.7	6.09	Texaco	755,915	4.60
Texaco	640.0	6.02	Amoco	682,185	4.15
Chevron	587.1	5.52	Mobil	603,345	3.67
Shell	530.0	4.98	Shell	601,885	3.66
Amoco	401.0	3.77	Arco	485,355	2.95
Mobil	352.0	3.31	Tenneco	375,692	2.29
Phillips	346.0	3.25	Phillips	319,740	1.95
Sun	195.1	1.83	Unocal	287,255	1.75
Unocal	170.9	1.61	Sun	239,440	1.46
U.S. Steel	160.2	1.51	DuPont	230,680	1.40
Occidental	147.6	1.39	Occidental	219,365	1.34
DuPont	120.0	1.13	Tex. Oil & Gas	198,475	1.21
Tenneco	101.4	0.95	Consolidated Gas	150,100	0.91
City of Long Beach	81.7	0.77	Pennzoil	138,438	0.84
Amerada Hess	72.0	0.68	U.S. Steel	137,712	0.84
Union Pacific	67.9	0.64	Union Pacific	115,194	0.70
El Paso	54.7	0.51	Enron Corp.	109,309	0.67
Sante Fe	49.9	0.47	El Paso	107,000	0.65
U.S. Total	**10,636.0**	**100%**		**16,428,000**	**100%**

	Proved Reserves				
	Crude oil and liquid oil				
	(Million/bbl.)	% of Mkt.		(Billions/CF)	% of Mkt.
Arco	2,746.0	7.55%	Exxon	17,962	9.29%
Exxon	2,722.0	7.49	Amoco	9,902	5.12
Standard Oil	2,647.8	7.28	Chevron	7,752	4.01
Shell	2,528.0	6.95	Mobil	7,600	3.93
Chevron	2,088.0	5.74	Standard Oil	7,219	3.73
Amoco	1,782.0	4.90	Shell	7,051	3.65
Texaco	1,766.0	4.86	Arco	6,134	3.17
Mobil	1,036.0	2.85	Texaco	5,803	3.00
Sun	699.0	1.92	Unocal	4,728	2.45
Unocal	666.0	1.83	Phillips	3,580	1.85
U.S. Steel	586.4	1.61	Tenneco	3,564	1.84
Phillips	576.0	1.58	Sun	2,588	1.34
Occidental	546.0	1.50	El Paso	2,426	1.25
DuPont	373.0	1.03	Occidental	2,264	1.17
Tenneco	318.0	0.87	DuPont	2,105	1.09
Amerada Hess	213.0	0.59	Texas Oil & Gas	1,836	0.95
Union Pacific	169.5	0.47	U.S. Steel	1,797	0.93
Pennzoil	156.0	0.43	Union Pacific	1,662	0.86
Sante Fe	131.3	0.36	Panhandle East.	1,465	0.76
Tex. Oil & Gas	106.8	0.29	Enron Corp.	1,388	0.72
U.S. Total	**36,360.0**	**100%**		**193,369**	**100%**

	Refining Capacity				
	Capacity (000 b/d)	% of Total capacity	(000 b/d)	Runs capacity	% of Total
Chevron	1,879.2	12.73%	Chevron	1,358.0	11.25%
Exxon	1,200.0	8.13	Exxon	1,054.0	8.73
Shell	1,019.6	6.91	Shell	890.0	7.37
Amoco	982.0	6.65	Amoco	839.0	6.95
Texaco	873.2	5.92	Texaco	838.0	6.94
Mobil	755.0	5.11	Arco	750.9	6.22
Standard Oil	664.5	4.50	Mobil	647.0	5.36
Arco	655.0	4.44	Standard Oil	597.5	4.95
U.S. Steel	492.5	3.34	Phillips	487.0	4.03
Unocal	474.5	3.21	U.S. Steel	402.7	3.34
Sun	443.0	3.00	Sun	391.7	3.24
DuPont	400.0	2.71	Unocal	374.0	3.10
Ashland	346.5	2.35	DuPont	365.0	3.02
Phillips	300.0	2.03	Ashland	297.5	2.46
Southland	297.0	2.01	Southland	219.0	1.81
Koch	280.0	1.90	Union Pacific	186.2	1.54
Coastal	261.3	1.77	Coastal	145.0	1.20
Union Pacific	220.0	1.49	Total Petro	143.4	1.19
Kerr-McGee	164.8	1.12	Diamond Sham.	124.8	1.03
Total Petro	152.0	1.03	Kerr-McGee	122.0	1.01
U.S. Total	**14,761.5**	**100%**		**12,073.5**	**100%**

Source: American Petroleum Institute, Market Shares and Industrial Company Data for U.S. Energy Markets 1950-1985.

Share of Market—Concentration Ratios

(% of U.S. total)

Gasoline Sales

	1985	1980	1975	1970	1965	1960
4 Firms	29.7%	28.5%	29.5%	30.7%	—	—
8 Firms	50.2	49.5	50.3	54.6	—	—
15 Firms	67.5	66.3	60.6	74.9	—	—
20 Firms	71.5	72.1	74.7	80.0	—	—
30 Firms	71.6	77.9	—	—	—	—

Proved Reserves of Crude Oil and Liquids

	1985	1980	1975	1970	1965	1960
4 Firms	29.3	31.1	36..3	—	—	—
8 Firms	47.6	46.3	55.6	—	—	—
15 Firms	58.0	59.5	70.4	—	—	—
20 Firms	60.1	62.7	74.5	—	—	—
30 Firms	61.8	65.7	—	—	—	—

Production of Crude Oil and Liquids

	1985	1980	1975	1970	1965	1960
4 Firms	26.1	25.3	26.1	26.3	23.9	20.8
8 Firms	43.7	40.8	41.2	41.7	38.5	33.5
15 Firms	55.3	56.1	57.0	56.9	50.3	44.2
20 Firms	58.4	60.6	61.2	61.1	55.0	49.1
30 Firms	62.0	64.8	—	—	—	—

Refining Capacity

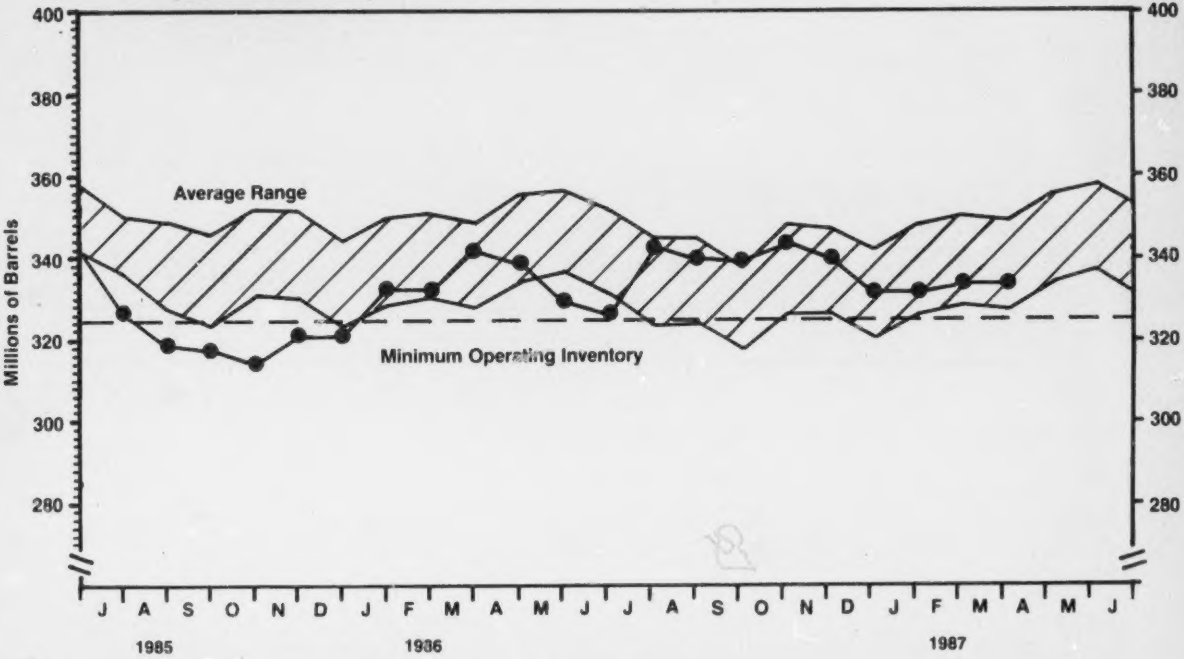
	1985	1980	1975	1970	1965	1960
4 Firms	34.4	29.0	29.9	32.5	30.4	32.0
8 Firms	54.4	49.0	53.5	57.5	54.3	55.0
15 Firms	73.0	67.0	74.1	78.1	75.0	72.5
20 Firms	80.3	74.5	81.3	84.3	83.0	81.4
30 Firms	88.8	82.3	—	—		

Refinery Runs

	1985	1980	1975	1970	1965	1960
4 Firms	34.3	31.2	32.9	34.2	31.0	33.2
8 Firms	57.8	53.9	57.7	61.0	55.3	56.8
15 Firms	78.8	73.6	79.4	84.6	73.3	74.2
20 Firms	84.6	81.5	86.8	91.1	81.4	83.4

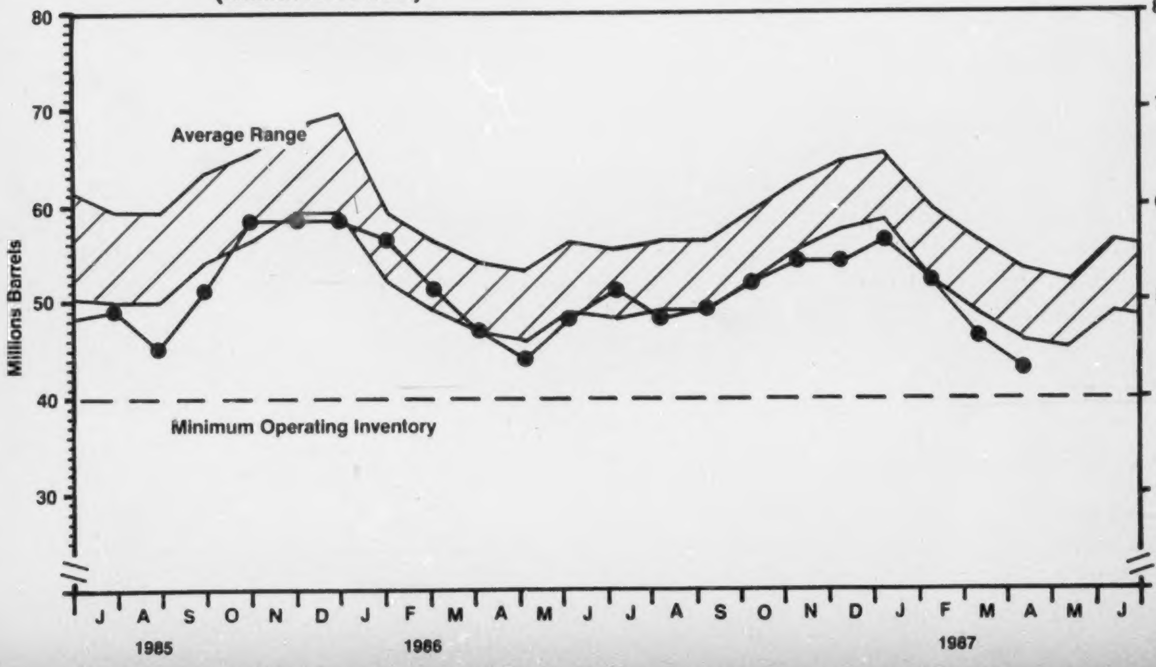
Source: American Petroleum Institute, Market Shares and Individual Company Data for U.S. Energy Markets 1950-1985.

Stocks of Crude Oil, U.S. Total (Millions of bbl.)

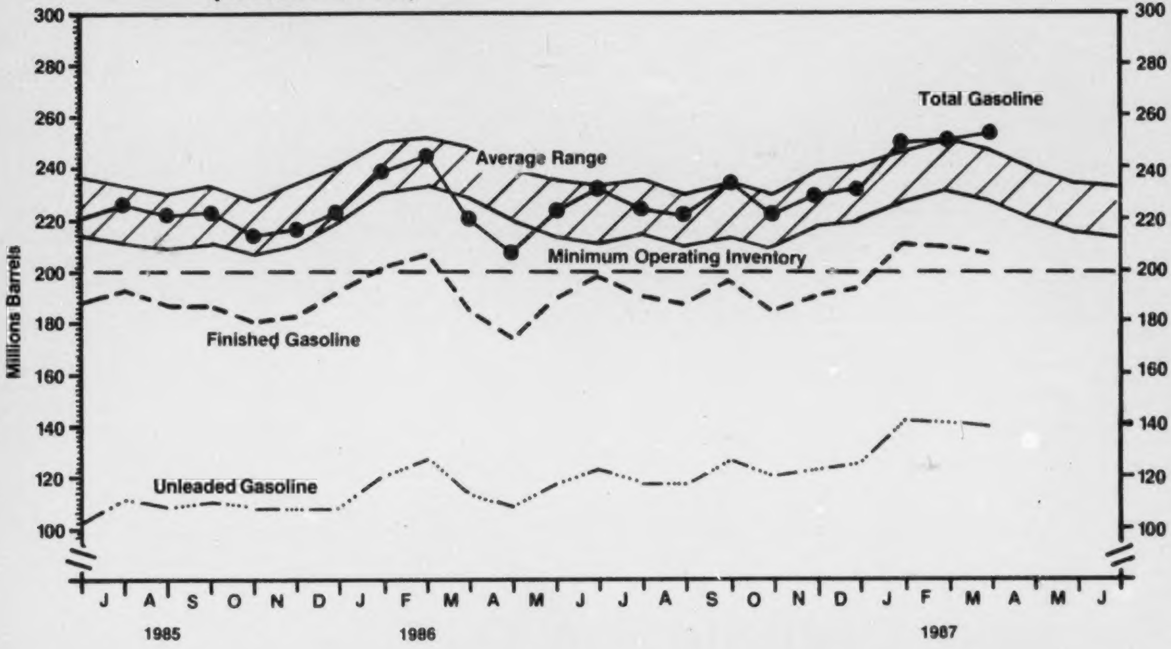


Crude Stocks at Primary Levels include those held at refineries, in pipelines, and in lease tanks, but do not include those held in the Strategic Petroleum Reserve operated by the U.S. Government. The average level and width of average range are based on three years of monthly data. The seasonal pattern is based on seven years of monthly data. National Petroleum Council defines the Minimum Operating Inventory as the minimum level required for routine operation. By its definition, runouts and shortages could occur if inventory levels fall below that level for any extended period of time. NPC revised its minimum operating levels in late-1983.
Source: Department of Energy, Weekly Statistical Reports, 1986.

Stocks of Residual Fuel Oil, U.S. Total (Millions of bbl.)



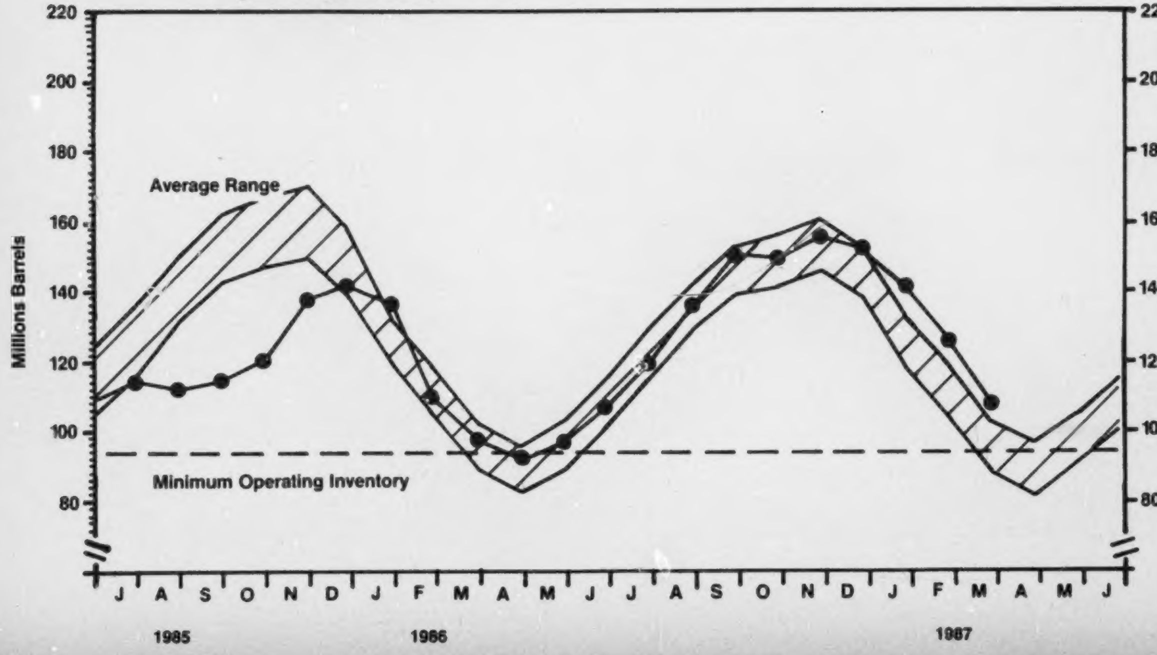
Stocks of Motor Gasoline, U.S. Total (Millions of bbl.)



Product stocks at the Primary Level include those held at refineries, in pipelines, and at major bulk terminals. They do not include stocks held in secondary distribution facilities such as jobber tanks, consumer tanks, and/or barges designed for consumer markets. The average level and width of average range are based on three years of monthly data. The seasonal pattern is based on seven years of monthly data. National Petroleum Council defines the Minimum Operating Inventory as the minimum level required for routine operation. By its definition, runouts and shortages could occur if inventory levels fall below that level for any extended period of time. NPC revised its minimum operating levels in late-1983.

Source: Energy Information Administration, Weekly Statistical Reports, 1986.

Stocks of Distillate Fuel Oil, U.S. Total (Millions of bbl.)



Stocks of Motor Gasoline

(Add 000,000 bbl.)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986												
Finished Gasoline	201.5	206.6	185.0	174.6	189.5	197.6	190.5	188.0	196.7	185.0	190.7	194.3
Leaded	81.6	79.5	71.0	66.0	71.5	74.6	72.9	69.7	70.1	65.1	67.2	68.4
Unleaded	119.9	127.1	114.0	108.6	118.0	123.0	117.6	118.3	126.6	120.0	123.4	125.9
Blending Components	37.6	38.2	35.0	34.1	33.1	35.8	34.6	34.8	38.3	38.2	39.4	39.0
Total Gasoline	239.0	244.8	219.9	208.6	222.6	233.4	225.2	222.8	235.1	223.2	230.1	233.3
East Coast	66.4	72.3	64.6	58.6	67.3	70.8	67.7	64.5	67.8	65.5	63.6	65.3
Midwest	66.7	69.9	64.8	56.7	57.8	61.4	58.5	58.4	61.0	57.9	62.4	62.9
Gulf Coast	66.4	64.9	56.5	60.2	63.4	65.9	63.0	65.6	68.8	63.3	66.3	69.6
Rocky Mountain	7.8	8.0	7.5	6.8	6.1	6.4	6.4	6.0	6.1	5.7	6.5	7.0
West Coast	31.7	29.8	26.5	26.3	27.9	28.8	29.5	28.3	31.4	30.8	31.3	28.5
1985												
Finished Gasoline	198.4	189.2	185.6	181.8	181.1	186.2	192.1	188.1	187.4	180.2	183.3	190.3
Leaded	88.7	82.5	80.8	77.5	75.5	85.1	80.0	79.1	76.1	71.5	74.5	81.4
Unleaded	109.7	106.7	104.8	104.4	105.6	101.1	112.1	109.0	111.3	108.6	108.7	108.9
Blending Components	35.3	35.7	33.2	33.2	33.8	32.1	34.4	33.5	35.6	33.7	33.8	32.5
Total Gasoline	233.7	224.9	218.8	215.0	214.9	218.3	226.5	221.6	223.1	213.9	217.0	222.8
East Coast	62.4	59.8	61.5	59.8	60.6	62.4	66.1	61.9	59.4	57.5	64.5	65.7
Midwest	71.1	67.4	66.0	60.2	55.1	58.1	60.6	64.8	67.5	59.4	58.7	59.2
Gulf Coast	59.6	60.4	57.0	59.2	62.0	60.9	64.1	61.3	61.1	62.2	60.8	63.5
Rocky Mountain	8.4	8.3	8.2	7.1	7.1	6.7	5.4	5.3	6.0	6.3	6.5	6.8
West Coast	32.2	29.0	26.2	28.7	30.1	30.2	30.2	28.2	29.2	28.6	26.6	27.7

Stocks of Distillate Fuel Oil

(Add 000,000 bbl.)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986												
Total U.S.	139.0	112.8	99.3	95.3	97.8	108.8	122.8	138.1	152.6	152.1	158.4	155.0
East Coast	55.5	37.9	35.9	30.0	30.7	35.5	46.4	58.8	68.7	73.3	73.9	74.8
Midwest	38.3	33.2	27.3	28.1	28.5	29.5	30.0	31.1	33.9	31.3	34.3	34.7
Gulf Coast	29.7	26.1	23.4	24.9	25.7	29.0	32.3	35.3	36.1	33.9	36.3	30.9
Rocky Mountain	3.2	3.3	2.4	2.6	3.0	3.0	3.1	3.0	2.9	2.7	3.0	3.3
West Coast	12.3	12.3	10.3	9.7	10.0	11.8	11.1	9.8	11.0	10.9	11.0	11.2
1985												
Total U.S.	142.4	121.4	99.3	96.8	104.4	109.7	115.7	113.8	117.4	123.4	139.7	143.7
East Coast	56.3	43.4	32.8	31.3	33.5	34.3	38.8	41.0	47.1	52.4	61.4	58.6
Midwest	44.3	40.2	32.2	29.4	30.3	32.6	32.7	32.4	32.8	32.0	34.5	37.2
Gulf Coast	27.3	23.8	21.3	24.0	27.0	27.9	28.4	26.0	24.6	27.3	30.2	32.9
Rocky Mountain	3.7	3.5	2.9	2.3	2.7	3.1	3.1	2.9	2.6	2.2	2.4	2.9
West Coast	10.7	10.5	10.2	9.9	10.9	11.9	12.8	11.5	10.4	9.5	11.1	12.1

Stocks of Residual Fuel Oil

(Add 000,000 bbl.)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986												
Total U.S.	48.1	42.7	38.8	35.9	39.6	43.0	40.4	41.3	44.0	45.8	46.3	47.5
East Coast	21.6	18.0	14.8	14.1	15.8	18.3	17.3	18.4	21.8	23.3	21.3	22.9
Midwest	3.8	4.0	3.3	3.2	3.2	3.2	3.1	3.1	3.1	3.0	3.3	3.5
Gulf Coast	11.9	10.2	10.0	10.3	10.1	12.2	11.5	11.8	10.0	11.0	11.8	12.1
Rocky Mountain	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
West Coast	10.3	10.0	10.3	7.9	10.0	8.9	8.1	7.7	8.8	8.2	9.6	8.7
1985												
Total U.S.	46.2	45.1	46.1	46.2	41.4	39.6	40.5	37.2	43.4	50.4	50.3	50.4
East Coast	23.0	20.2	21.6	20.5	17.6	17.2	18.5	14.6	19.8	25.6	24.4	23.0
Midwest	3.0	3.4	3.5	3.6	3.7	3.7	3.5	3.8	3.4	3.1	3.8	4.0
Gulf Coast	10.6	11.4	11.1	11.7	11.4	10.4	9.4	9.4	11.9	12.7	12.4	12.6
Rocky Mountain	0.5	0.5	0.6	0.5	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.5
West Coast	9.1	9.6	9.4	10.0	8.2	7.9	8.7	9.0	7.8	8.7	9.3	10.3

Source: Energy Information Administration, Weekly Statistical Reports.

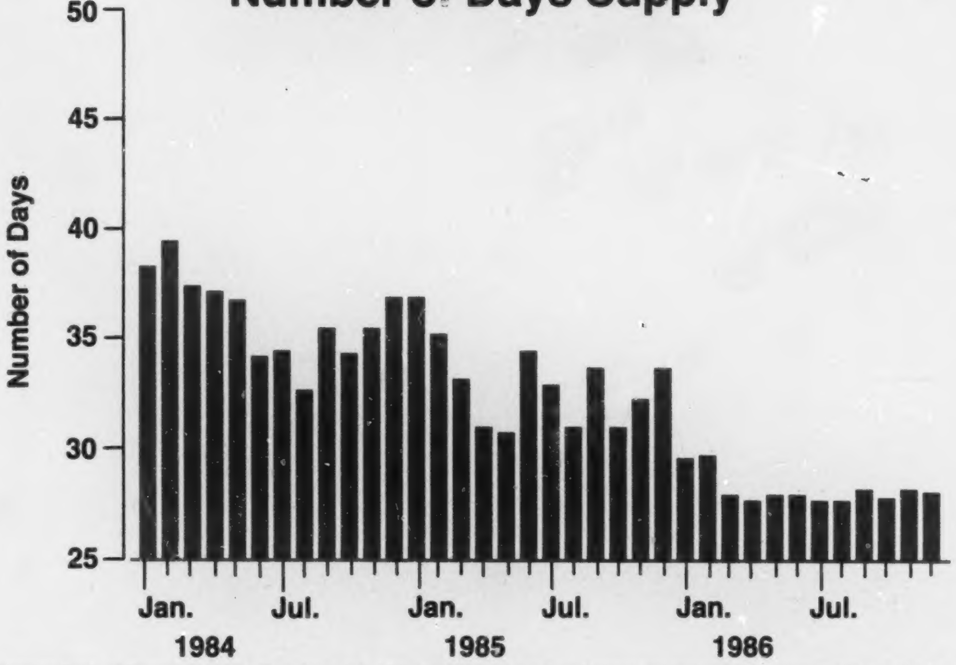
Refinery and Bulk Terminal Stocks By States and PAD Regions—1986

(Add 000 bbl.)

State	Leaded Gasoline	Unleaded Gasoline	Kerosine	Distillate	Residual
PAD District 1					
Connecticut	394	876	150	3,503	459
Delaware, D.C., Maryland	551	1,522	134	4,578	1,531
Florida	1,902	4,601	262	2,093	1,296
Georgia	1,213	1,705	84	1,539	281
Maine	274	758	146	1,599	678
Massachusetts	546	1,683	95	5,368	2,107
New Hampshire, Vermont	49	90	w	811	78
New Jersey	2,023	7,747	305	20,098	8,156
New York	1,427	3,623	323	11,515	3,764
North Carolina	1,130	1,595	415	1,872	763
Pennsylvania	2,052	3,599	760	6,315	2,116
Rhode Island	229	389	w	2,253	342
South Carolina	658	1,104	123	1,141	406
Virginia	1,318	1,796	177	3,415	837
West Virginia	135	179	20	210	99
TOTAL	**13,901**	**31,267**	**3,271**	**66,310**	**22,913**
PAD District 2					
Illinois	2,818	4,475	374	4,226	1,026
Indiana	1,660	2,404	299	3,053	322
Iowa	736	804	w	1,542	w
Kansas	1,302	1,737	46	2,285	44
Kentucky	591	976	79	1,005	162
Michigan	1,552	2,438	227	2,169	154
Minnesota	954	1,079	w	1,934	703
Missouri	578	907	w	915	w
Nebraska	292	261	0	549	0
North & South Dakota	311	364	24	1,109	w
Ohio	1,940	2,622	581	2,206	259
Oklahoma	919	1,098	342	1,793	127
Tennessee	877	1,080	92	1,118	324
Wisconsin	884	1,170	w	1,790	105
TOTAL	**15,414**	**21,415**	**2,132**	**25,694**	**3,453**
PAD District 3					
Alabama	635	718	50	812	1,211
Arkansas	279	299	w	215	22
Louisiana	2,124	4,160	411	5,210	4,269
Mississippi	849	1,291	17	2,081	349
New Mexico	196	191	w	285	16
Texas	7,630	14,307	1,163	13,626	6,185
TOTAL	**11,713**	**20,966**	**1,663**	**22,229**	**12,052**
PAD District 4					
Colorado	482	631	3	503	36
Idaho	152	97	0	130	0
Montana	652	433	w	783	82
Utah	236	296	0	529	122
Wyoming	336	457	w	831	104
TOTAL	**1,858**	**1,914**	**34**	**2,776**	**344**
PAD District 5					
Alaska	389	630	w	1,150	w
Arizona	342	433	w	205	0
California	4,431	7,177	208	5,113	5,444
Hawaii	85	408	0	242	w
Nevada	149	288	w	222	w
Oregon	1,078	897	w	1,201	274
Washington	1,685	1,652	w	1,710	1,062
TOTAL	**8,159**	**11,485**	**278**	**9,843**	**8,164**
U.S. Total	**51,045**	**87,047**	**7,378**	**126,852**	**46,926**

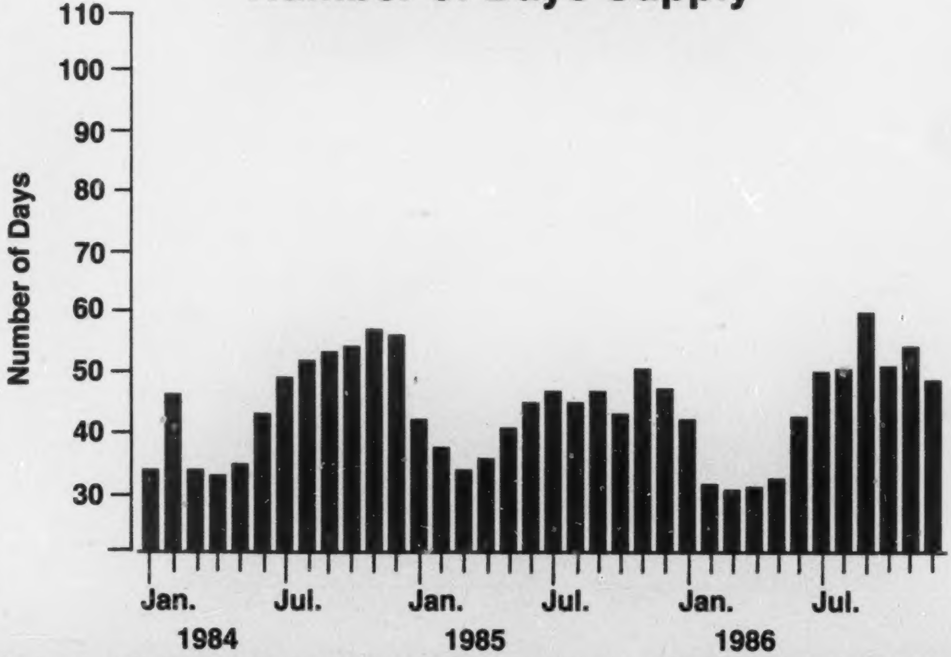
W = Withheld to avoid disclosure of individual company data.
Source: Energy Information Administration, Petroleum Supply Monthly, December 1986.

Gasoline Inventories
Number of Days Supply



Sources: Dept. of Energy, American Petroleum Inst. Historical Range based on highest and lowest value between 1973 and1980.

Distillate Inventories
Number of Days Supply



Sources: Dept. of Energy, American Petroleum Inst. Historical Range based on highest and lowest value between 1973 and 1980.

U.S. Crude Oil Production—1985-1976

(Thousands of b/d)

	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976
PAD District 1										
Florida	31.4	39.6	53.4	70.2	95.3	117.2	129.2	130.2	127.8	121.5
New York	2.9	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Pennsylvania	13.3	11.7	11.7	11.7	10.2	7.2	7.9	7.9	7.4	8.3
Virginia	**	**	0.2	0.1	**	**	**	**	**	**
West Virginia	9.7	9.7	9.9	8.9	9.5	6.4	6.6	6.5	6.9	6.9
Total	**57.3**	**63.3**	**77.5**	**93.2**	**117.3**	**133.1**	**146.0**	**146.9**	**144.4**	**139.0**
PAD District 2										
Illinois	82.9	79.1	80.0	75.9	66.0	62.0	59.7	64.0	70.2	71.8
Indiana	14.2	15.1	14.6	15.2	12.9	13.6	12.9	12.8	14.6	12.7
Kansas	206.6	207.5	196.1	193.2	180.3	164.3	156.2	155.0	157.5	160.4
Kentucky	21.3	21.3	21.6	20.2	17.9	16.2	15.1	15.7	18.0	20.4
Michigan	74.8	83.7	86.9	86.2	89.5	97.8	95.5	95.0	90.3	83.1
Nebraska	19.0	17.7	17.5	18.8	18.3	17.0	16.6	16.1	16.4	16.9
North Dakota	139.3	144.3	138.9	129.5	124.4	110.2	84.7	68.0	63.8	59.4
Ohio	41.1	41.8	41.0	39.9	37.1	35.3	32.8	30.6	28.4	27.3
Oklahoma	445.9	461.3	434.5	434.6	422.1	410.2	393.6	412.2	428.4	441.0
South Dakota	4.4	3.7	3.2	3.2	2.7	2.1	2.3	2.4	1.7	1.2
Other (a)	2.9	3.3	3.6	3.7	3.2	2.4	1.9	1.8	2.4	1.8
Total	**1,052.4**	**1,078.8**	**1,037.9**	**1,020.4**	**974.4**	**931.1**	**871.3**	**873.6**	**891.7**	**896.0**
PAD District 3										
Alabama	59.1	54.3	51.4	54.8	56.6	60.5	52.5	54.3	50.0	40.2
Arkansas	52.2	51.3	51.6	51.6	50.3	49.8	51.7	55.7	55.3	49.5
Louisiana	1,392.4	1,411.7	1,313.9	1,255.9	1,231.0	1,281.8	1,341.6	1,459.6	1,542.2	1,657.1
Mississippi	83.9	89.8	86.2	90.5	93.7	98.2	102.3	115.1	117.9	125.9
New Mexico	215.2	217.4	205.9	194.6	196.1	205.1	218.2	228.4	239.0	251.7
Texas	2,435.2	2,478.8	2,473.0	2,535.1	2,589.4	2,670.6	2,789.3	2,942.6	3,117.5	3,250.0
Total	**4,238.0**	**4,303.4**	**4,182.0**	**4,182.5**	**4,217.1**	**4,366.0**	**4,555.6**	**4,855.7**	**5,121.9**	**5,374.4**
PAD District 4										
Colorado	82.9	79.0	79.6	83.7	83.0	81.4	88.5	100.8	108.1	106.5
Montana	81.6	81.5	80.1	84.7	84.4	80.0	82.1	83.5	89.5	89.7
Utah	111.8	95.0	80.9	61.5	70.9	68.2	76.0	85.9	90.7	93.7
Wyoming	352.1	340.5	324.1	324.1	357.7	345.2	361.3	376.4	373.9	366.5
Total	**628.4**	**596.0**	**564.7**	**554.0**	**596.0**	**574.8**	**607.9**	**646.6**	**662.2**	**656.4**
PAD District 5										
Alaska	1,825.3	1,727.1	1,713.8	1,695.6	1,609.1	1,616.6	1,400.9	1,229.1	463.6	173.2
Arizona	0.5	0.6	0.6	0.9	1.0	1.1	1.3	1.1	1.2	1.4
California	1,161.3	1,128.8	1,108.7	1,100.2	1,054.7	975.2	965.1	951.2	957.8	890.8
Nevada	8.3	5.2	2.2	1.7	1.9	2.4	3.4	3.2	1.8	0.4
Total	**2,995.4**	**2,861.7**	**2,825.3**	**2,798.4**	**2,666.7**	**2,595.3**	**2,370.7**	**2,184.6**	**1,424.4**	**1,065.8**
Total U.S.	**8,972**	**8,903**	**8,688**	**8,648**	**8,571**	**8,600**	**8,551**	**8,707**	**8,244**	**8,131**

**Less than 100 barrels per day.

(a) Missouri and Tennessee.

Source: Independent Petroleum Assn. of America and American Petroleum Institute Data Book.

Domestic Supply Trend (Add 000,000 bbl.)

Year	All products	Gasoline	Kerosine (a)	Distillate	Residual	LPG	Lubes	Other
1986 (b)	5,883	2,555	431	1,054	509	552	48	734
1985	5,740	2,493	404	1,047	439	584	53	720
1984	5,756	2,449	391	1,041	501	576	57	741
1983	5,585	2,417	353	982	519	551	53	710
1982	5,568	2,386	339	977	618	443	51	754
1981	5,861	2,404	342	1,032	762	407	56	858
1980	6,932	2,536	397	1,389	1,033	414	58	1,105
1979	6,758	2,568	388	1,210	1,032	456	66	1,038
1978	6,879	2,705	377	1,253	1,103	358	63	1,020
1977	6,710	2,633	350	1,223	1,121	369	58	956
1976	6,391	2,567	351	1,147	1,025	381	56	864
1975	5,958	2,436	347	1,041	899	362	50	823
1973	6,317	2,453	386	1,124	1,030	404	59	851
1971	5,552	2,213	385	971	838	369	49	727
1970	5,364	2,131	358	927	804	363	50	731
1965	4,202	1,720	220	776	587	307	47	545
1960	3,610	1.512	132	685	559	227	43	427

(a) Kerosine includes jet fuel; (b) Preliminary.
Source: Petroleum Supply Monthly, Energy Information Administration, January 1987

U.S. Estimated Petroleum Balance (Add 000 b/d)

	Full year			4th Quarter			3rd Quarter			2nd Quarter		
Petroleum Products Supplied From Primary Storage (a)	1986	1985	% Chng.	1986	1985	% Chng.	1986	1985	% Chng.	1986	1985	% Chng.
Products Supplied:												
Motor gasoline, total	7,012	6,831	2.6	7,035	6,820	3.2	7,324	6,963	5.2	7,077	7,005	1.0
Finished leaded gasoline	2,154	2,425	(11.2)	1,979	2,312	(14.4)	2,248	2,409	(6.7)	2,240	2,536	(12.6)
Finished unleaded gasoline	4,858	4,406	10.3	5,056	4,508	12.2	5,076	4,554	11.5	6,837	4,442	8.9
Naphtha-jet	204	214	(4.7)	209	207	1.0	201	209	(3.8)	205	235	(12.8)
Kerosine-jet	1,105	1,005	10.0	1,174	1,086	8.1	1,111	1,003	10.8	1,087	941	15.5
Distillate fuel oil	2,903	2,868	1.2	3,034	2,970	2.2	2,538	2,549	(0.4)	2,776	2,666	4.1
Residual fuel oil	1,415	1,202	17.7	1,470	1,271	15.7	1,423	1,086	31.0	1,350	1,109	21.7
All other oils	3,878	3,870	0.2	4,067	4,005	1.5	3,898	4,017	(3.0)	3,708	3,742	(0.9)
Reclassified	−334	−262	27.5	−365	−334	8.1	−352	−291	21.0	−294	−211	39.3
Total domestic products supplied	16,183	15,728	2.9	16,628	16,025	3.8	16,143	15,536	3.9	15,909	15,487	2.7
Exports	766	781	(1.9)	794	882	(10.0)	647	743	(12.9)	788	720	9.4
Total Products Supplied	**16,949**	**16,509**	**2.7**	**17,422**	**16,907**	**3.0**	**16,790**	**16,279**	**3.1**	**16,697**	**16,207**	**3.0**
Supply:												
Domestic production												
Crude oil	8,667	8,971	(3.4)	8,364	8,968	(6.7)	8,662	8,901	(2.7)	8,824	9,066	(2.7)
Natural gas liquids	1,567	1,609	(2.6)	1,505	1,650	(8.8)	1,554	1,579	(1.6)	1,577	1,591	(0.9)
Other supply	804	759	5.9	679	787	(11.3)	519	827	(37.2)	697	769	(9.4)
Total domestic supply	11,038	11,339	(2.7)	10,548	11,405	(7.5)	10,735	11,307	(5.1)	11,098	11,426	(2.9)
Imports:												
Crude oil, total (b)	4,077	3,083	32.2	4,367	3,591	21.6	4,832	3,019	60.1	4,080	3,281	24.4
Canadian	555	468	18.6	587	488	20.3	553	436	26.8	624	506	23.3
Other	3,522	2,615	34.7	3,780	3,103	21.8	4,279	2,583	65.7	3,456	2,775	24.5
Products, total	1,952	1,866	4.6	1,994	2,044	(2.4)	2,027	1,721	17.8	1,809	1,902	(4.9)
Residual Fuel oil	644	510	26.7	669	617	8.4	640	491	30.3	612	392	56.1
Other	1,306	1,356	(3.7)	1,325	1,427	(7.1)	1,387	1,230	12.8	1,197	1,510	(20.7)
Total imports	6,029	4,949	21.8	6,361	5,635	12.9	6,859	4,740	44.7	5,889	5,183	13.6
Total supply	**17,067**	**16,288**	**4.8**	**16,909**	**17,040**	**(0.8)**	**17,594**	**16,047**	**9.6**	**16,987**	**16,909**	**2.3**

(a) Preliminary for 1986: (b) Does not include SPR imports or reserves.
Source: American Petroleum Institute, Monthly Statistical Reports, 1986.

U.S. Refinery Operations (Add 000 b/d)

	Full year			4th Quarter			3rd Quarter			2nd Quarter		
U.S. Refinery Operations (a)	1986	1985	% Chng.	1986	1985	% Chng.	1986	1985	% Chng.	1986	1985	% Chng.
Input to crude oil distillation units	12,833	12,165	5.5	12,914	12,578	2.7	13,197	12,330	7.0	13,172	12,221	7.8
Operable capacity	15,494	15,671	(1.1)	15,534	15,717	(1.2)	15,558	15,710	(1.0)	15,497	15,656	(1.0)
Refinery utilization	82.8%	77.6%	6.7	83.1%	80.0%	3.9	84.8%	78.5%	8.0	85.0%	78.1%	8.8
Crude oil runs	12,716	12,002	5.9	12,774	12,396	3.0	13,095	12,141	7.9	13,005	12,064	7.8

(a) Preliminary for 1986.
Source: American Petroleum Institute, Monthly Statistical Reports, 1986.

Crude and Product Inventories (Add 000,000 bbl.)

	4th Quarter			3rd Quarter			2nd Quarter			1st Quarter		
Stocks	1986	1985	% Chng.	1986	1985	% Chng.	1986	1985	% Chng.	1986	1985	% Chng.
Crude oil (a)	323.4	320.9	0.8	335.1	317.4	5.6	321.6	344.9	(6.5)	339.9	329.1	3.3
Unfinished oils	94.9	106.7	(11.1)	97.8	104.1	(6.1)	112.6	113.8	(1.1)	102.6	110.2	(6.9)
Total motor gasoline	237.5	222.8	6.6	230.3	223.1	3.2	227.2	218.3	4.1	220.4	220.1	0.1
Finished leaded motor gasoline*	67.9	81.4	(16.6)	68.9	76.1	(9.5)	73.3	85.1	(13.9)	72.2	81.3	(11.2)
Finished unleaded motor gasoline*	130.4	108.9	19.7	122.8	111.3	10.3	118.8	101.1	17.5	113.3	105.1	7.8
Naphtha-Jet	7.0	6.7	4.5	6.2	6.9	(10.1)	6.0	6.2	(3.2)	6.0	6.9	(13.0)
Kerosine-Jet	42.2	33.8	24.9	43.0	35.2	22.2	38.8	36.5	6.3	40.4	37.2	8.6
Distillate fuel oil	153.2	143.7	6.6	150.0	117.4	27.8	105.5	109.7	(3.8)	95.7	99.4	(3.7)
Residual fuel oil	43.4	50.4	(13.9)	43.6	43.4	0.5	38.7	39.6	(2.3)	39.2	46.3	(15.3)
All other oils	167.1	140.5	18.9	209.7	165.7	26.6	170.3	166.3	2.4	132.6	148.5	(10.7)
Total all oils	**1,068.7**	**1,025.5**	**4.2**	**1,115.7**	**1,013.2**	**10.1**	**1,020.7**	**1,034.5**	**(1.3)**	**976.8**	**997.7**	**(2.1)**

*Included in total motor gasoline: (a) Does not include SPR.
Source: American Petroleum Institute, Monthly Statistical Reports 1986.

Petroleum Product Consumption—1985

(Add 000 bbl.)

	Motor Gasoline	Aviation Fuels	Middle Distillates (a)	Residual Fuel	Asphalt	Propane	All Other (b)	Total Products
Alabama	41,199	2,914	16,364	1,796	4,170	3,517	8,688	78,648
Alaska	9,112	14,083	8,869	762	538	276	4,178	37,818
Arizona	36,549	3,739	7,386	286	2,845	819	6,411	58,035
Arkansas	26,258	614	11,498	674	1,402	3,239	5,425	49,110
California	294,592	55,372	81,128	56,856	15,369	13,519	64,187	581,023
Colorado	39,947	7,715	11,234	167	3,444	3,118	8,150	73,775
Connecticut	29,406	1,075	12,590	21,291	2,325	1,265	8,439	76,391
Delaware	8,618	156	5,823	1,857	918	1,544	2,349	21,265
Dist. of Columbia	3,570	101	3,028	963	20	(c)	954	8.636
Florida	125,450	17,830	30,317	28,956	7,398	7,625	27,021	244,597
Georgia	70,184	14,914	20,404	2,279	5,083	5,038	14,642	132,544
Hawaii	8,129	11,115	2,618	11,592	342	88	4,208	38,092
Idaho	9,614	339	5,037	357	701	596	2,067	18,711
Illinois	95,700	2,304	27,289	1,026	8,326	6,841	17,571	159,057
Indiana	59,940	15,330	29,210	1,711	5,922	4,931	14,536	131,580
Iowa	33,986	555	16,186	388	2,246	8,018	7,623	69,002
Kansas	54,469	3,824	29,562	762	1,887	35,005	15,587	141,096
Kentucky	38,860	3,116	18,701	290	2,078	3,228	8,231	74,504
Louisiana	55,188	11,110	39,814	27,831	2,037	12,397	18,427	166,804
Maine	12,471	533	7,391	8,803	2,425	682	4,012	36,317
Maryland	43,787	2,578	16,904	7,155	5,027	1,644	9,575	86,670
Massachusetts	51,516	6,847	32,855	30,841	1,166	2,039	15,557	140,821
Michigan	96,806	5,085	24,471	1,782	3,085	8,624	17,369	157,222
Minnesota	57,395	7,813	24,607	1,140	5,537	8,702	13,064	118,258
Mississippi	30,870	3,075	21,187	4,988	2,280	7,339	8,661	78,400
Missouri	56,817	5,810	16,493	381	4,767	4,956	11,081	100,305
Montana	12,107	632	7,108	449	1,624	1,506	2,909	26,335
Nebraska	16,687	596	11,192	298	525	3,348	4,054	36,700
Nevada	12,705	3,465	5,605	77	936	706	2,918	26,412
New Hampshire	5,759	92	5,534	3,297	948	1,375	2,112	19,117
New Jersey	117,227	43,208	80,695	37,024	5,253	2,727	35,536	321,670
New Mexico	18,736	990	7,864	560	1,666	6,680	4,533	41,029
New York	135,650	2,609	75,292	56,331	8,000	5,669	35,215	318,766
North Carolina	71,839	4,392	27,347	5,933	3,829	6,240	14,851	134,431
North Dakota	9,039	216	8,183	231	1,162	3,969	2,832	25,632
Ohio	109,466	6,759	39,421	2,120	7,036	4,398	21,013	190,213
Oklahoma	47,023	3,577	20,661	701	4,443	7,644	10,438	94,487
Oregon	29,941	2,051	15,882	2,639	3,150	1,270	6,822	61,755
Pennsylvania	106,116	9,921	53,490	18,463	5,453	4,834	24,624	222,901
Rhode Island	9,789	376	7,327	1,932	3,301	312	2,861	25,898
South Carolina	35,430	724	11,526	2,418	1,517	3,055	6,790	61,460
South Dakota	8,948	240	5,618	9	934	1,603	2,155	19,507
Tennessee	63,676	4,710	26,322	557	4,893	2,194	12,711	115,063
Texas	286,197	70,501	132,955	41,512	13,105	77,173	77,178	698,621
Utah	19,518	2,904	7,552	772	1,750	1,309	4,198	38,003
Vermont	2,404	136	2,328	220	366	561	747	6,762
Virginia	63,242	8,272	27,233	7,435	4,476	2,527	14,057	127,242
Washington	47,329	13,187	25,239	9,911	2,263	2,372	12,457	112,758
West Virginia	13,507	200	6,002	1,012	477	412	2,684	24,294
Wisconsin	48,230	1,495	20,499	143	1,876	5,749	9,686	87,678
Wyoming	7,308	167	9,066	316	1,860	3,298	2,734	24,749
TOTAL U.S.	**2,688,306**	**379,367**	**1,160,907**	**409,294**	**172,181**	**295,981**	**634,128**	**5,740,143**

(a) Includes kerosine.
(b) Includes naphtha, lubricants, waxes, petroleum coke and gas.
(c) Included with Maryland area.
Source: Independent Petroleum Assn. of America, "The Oil and Gas Producing Industry in Your State," 1986.

IPAA's Updated Outlook: Paper Thin Edges Keep Things on the Plus Side

(Add 000 b/d except for closing stocks)

	1987 Forecast						
DEMAND	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	F.Y. 1987	F.Y. 1986	% Chng
Domestic Products				(Add 000 b/d)			
Motor Gasoline	6,654	7,175	7,293	7,070	7,050	7,018	0.5
Aviation Fuels	1,345	1,362	1,397	1,414	1,380	1,332	3.6
Middle Distillates	3,354	2,822	2,710	3,207	3,022	3,004	0.6
Residual Fuel Oil	1,340	1,235	1,250	1,295	1,280	1,399	(8.5)
Other Products	3,463	3,457	3,660	3,507	3,521	3,388	3.9
Domestic Demand	16,156	16,051	16,310	16,493	16,253	16,141	0.7
Total Exports	775	704	694	758	731	770	(5.1)
TOTAL DEMAND	**16,931**	**16,755**	**17,004**	**17,251**	**16,984**	**16,911**	**0.4**

SUPPLY							
Domestic Production							
Crude Oil	8,409	8,320	8,270	8,205	8,300	8,668	(4.2)
Natural Gas Liquids	1,554	1,518	1,509	1,546	1,532	1,571	(2.5)
Total Production	**9,963**	**9,838**	**9,779**	**9,751**	**9,832**	**10,239**	**(4.0)**
Imports							
Motor Gasoline	313	374	402	346	359	363	1.1
Aviation Fuels	44	59	65	55	56	54	3.7
Middle Distillates	230	178	232	285	231	246	(6.1)
Residual Fuel Oil	632	568	594	625	605	650	(6.9)
Other Products	609	636	612	645	626	637	(1.7)
Total Products	1,828	1,815	1,905	1,956	1,887	1,950	(3.2)
Crude Oil Imports	3,869	4,438	4,673	4,587	4,394	4,063	8.1
Total Imports	5,697	6,253	6,578	6,543	6,271	6,013	4.3
Other Supply	726	850	823	838	807	818	(1.3)
TOTAL SUPPLY	**16,836**	**16,941**	**17,180**	**17,132**	**16,910**	**17,070**	**(0.9)**
Refinery Inputs	12,303	12,924	13,058	12,957	12,809	13,178	(2.8)

CLOSING STOCKS (millions of bbl.)							
Motor Gasoline	247.33	237.92	231.65	231.27	231.27	233.33	(8.8)
Aviation Fuels	50.62	49.37	49.34	47.30	47.30	52.18	(9.4)
Middle Distillates	112.53	117.57	138.29	146.07	146.07	163.57	(10.7)
Residual Fuel Oil	38.14	40.53	43.44	45.34	45.34	47.51	(4.6)
Other Products	251.75	273.48	270.82	255.40	255.40	254.16	0.5
Total Products	700.37	718.87	733.54	725.38	725.38	750.75	(3.4)
Crude Oil Stocks	332.50	330.92	332.32	329.48	329.48	331.33	(0.6)
TOTAL STOCKS	**1,032.87**	**1,049.79**	**1,065.86**	**1,054.86**	**1,054.86**	**1,081.97**	**(2.5)**

Source: IPAA-U.S. Supply and Demand Forecast, May 1987.

Independent Petroleum Assn. of America, in a fresh projection on what's ahead in 1987, says the outlook really hasn't changed much since last fall; if anything, the association says, it now believes that oil marketers are facing even flatter times than had been anticipated last October [*NPN*—Jan. '87, p35].

One of the significant trends spotted in the new IPAA study: Crude and product inventories will be down as much as 10.7% (middle distillates) by Dec. 31. As the tables above show, IPAA expects only marginal changes in gasoline consumption from 1986, along with a continuing decline in crude production. Imports will continue to edge upward by an additional 250,000 b/d, IPAA says.

This latest forecast was issued at the association's mid-May meeting in Las Vegas, Nev.

Supply-Demand Forecast to 2000

Conoco's annual projections on the world of oil through the year 2000 are sobering forecasts for marketers and consumers alike.

There is nothing strikingly new in the current predictions; most have been cited in recent years not only by Conoco but by other oil companies and government energy experts.

What is strikingly important this time around, however, is that current consumption patterns and a rising tide of imports indicate the Organization of Petroleum Exporting Countries (OPEC) may be able to dominate production and prices in the short-term future.

Conoco anticipates that U.S. demand for crude oil and products will continue to grow at a 1% per year increase between now and the end of the century, adding 3-million b/d to the current consumption rate of 15.7-million b/d.

"As oil demand rises, U.S. requirements will have to be met by higher imports," says the Conoco study, "World Energy Outlook through 2000." "Crude oil and product imports will increase from 26% of demand in 1985 to 41% in 1990 and to 56% in 2000."

(Other forecasts say the import factor could hit 55% to 60% in the early 1990s).

"Furthermore, the bulk of the increase in imports is likely to come from regions vulnerable to supply disruptions," Conoco says. "From the standpoint of energy security, this trend represents a significant backward step to the conditions of the early 1970s."

What Conoco is pointing up here is that imports, which were running a little more than 4-million b/d in 1985, will be close to 11-million b/d by 2000. The study says that OPEC will probably be supplying 60% of world demand by 2000 and that, depending on price and production, may be supplying as much as 75%.

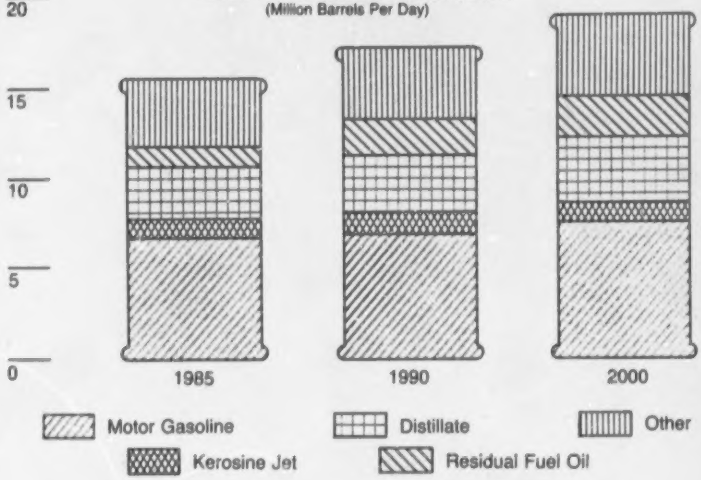
U.S. crude production will continue to decline over the next 10 to 15 years and capital investments, because of the slump in prices, will not be able to hit the $200-billion which is believed necessary to stabilize oil and gas exploration and development through 1990. Here are some additional Conoco comments:

"U.S. oil demand will increase from 15.7-million b/d in 1985 to 19.0-million b/d in 1990. Gasoline demand will rise as lower prices not only spur increased driving but also slow efficiency gains. Strong gains in the transportation sector, offsetting continued weakness in heating oil, will boost distillate fuel oil demand.

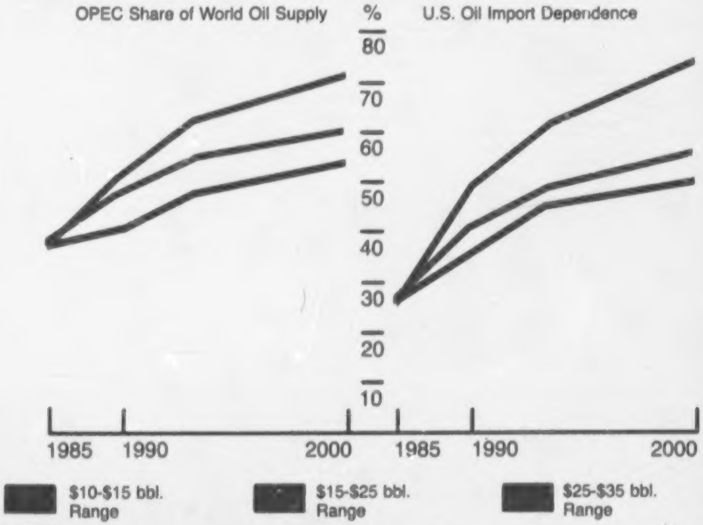
"Lower prices will have the largest impact on residual fuel oil demand which will nearly double. By 2000, fuel oil will win back from natural gas much of the dual-fueled industrial and utility boiler market that it lost after the second oil price run-up."

On domestic and international crude oil prices, Conoco's prognosticators think they will creep up to the $18 to $20 bbl. range by 1990 and to the $40 to $50 range by the turn of the century.

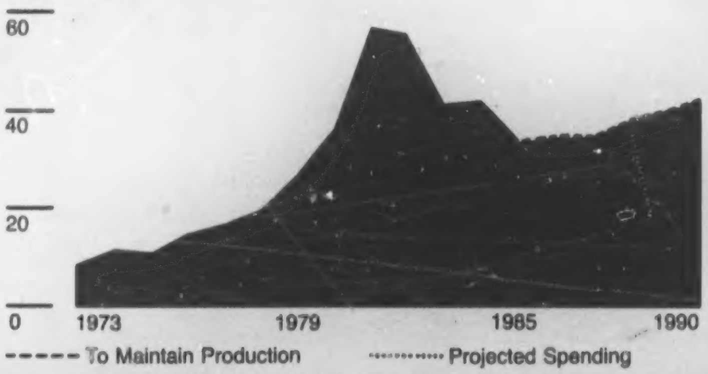
U.S. Oil Product Demand
(Million Barrels Per Day)



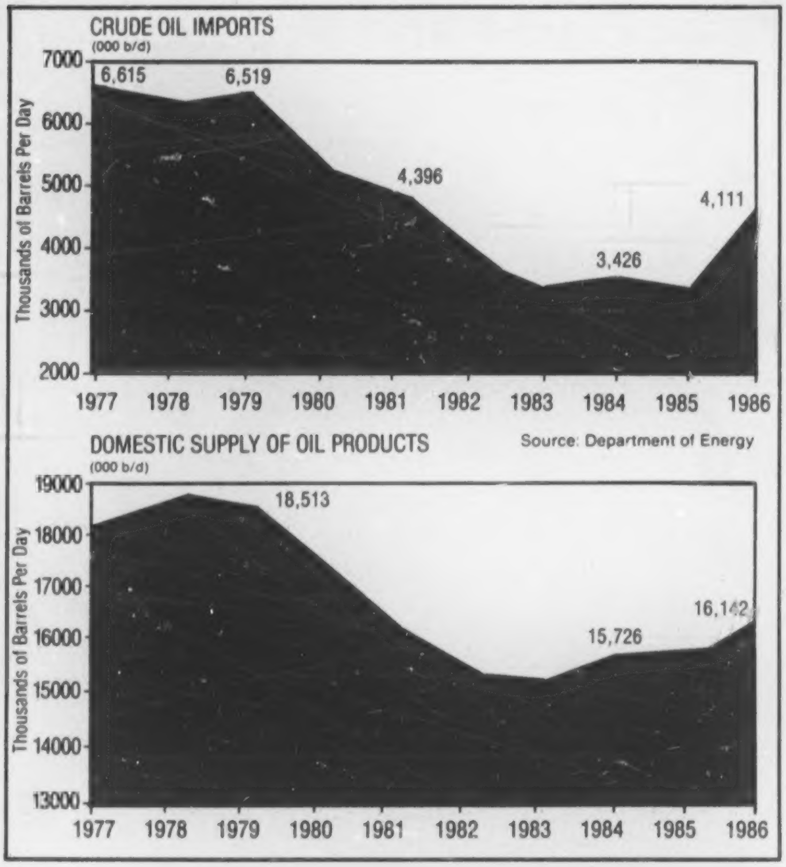
Comparison of Alternative Scenarios



U.S. Petroleum Industry Upstream Capital Requirements
(Billion Dollars)



Source: Conoco, Inc., "World Energy Outlook Through 2000," October 1986.



Source: Department of Energy

Unleaded Gasoline: The Growth by Years

(Add 000 b/d)

		Total Gasoline Consumption	Unleaded Gasoline Consumption	Unleaded Percent of total
1986	January	6,487	4,404	67.9
	February	6,438	4,341	67.4
	March	6,970	4,706	67.5
	April	7,083	4,813	67.9
	May	6,995	4,714	67.4
	June	7,200	4,934	68.5
	July	7,519	5,232	69.6
	August	7,434	5,131	69.0
	September	6,857	4,800	70.0
	October	7,232	5,068	70.1
	November	6,983	4,882	71.1
	December	7,077	5,129	72.5
	Average	**7,018**	**4,850**	**69.1**
1985 Avg.		**6,831**	**4,406**	**64.5**
1984 Avg.		**6,693**	**3,987**	**59.6**
1983 Avg.		**6,622**	**3,647**	**55.1**
1982 Avg.		**6,539**	**3,409**	**52.1**
1981 Avg.		**6,588**	**3,264**	**49.5**
1980 Avg.		**6,579**	**3,067**	**46.6**
1979 Avg.		**7,034**	**2,798**	**39.8**
1978 Avg.		**7,412**	**2,521**	**34.0**
1977 Avg.(a)		**7,177**	**1,976**	**27.5**
1976 Avg.		**6,978**	—	—
1975 Avg.		**6,675**	—	—
1974 Avg.		**6,537**	—	—
1973 Avg.		**6,674**	—	—

(a) Unleaded was mandated in July, 1977.
Source: Energy Information Administration, Petroleum Supply. Monthly, December 1986, published February 1987.

Supply and Demand, Principal Products (Add 000 bbl.)

	Motor Gasoline	Aviation Gasoline	Distillate Fuel Oil	Residual Fuel Oil	Jet Fuel (a)	Lubricants	Asphalt
Domestic Supply							
1986 (b)	2,561,444	10,803	1,059,842	510,485	475,472	47,292	163,526
1985	2,493,361	9,969	1,046,827	438,840	444,702	53,096	155,136
Production							
1986 (b)	2,465,538	10,867	1,020,905	323,833	471,867	55,061	149,811
1985	2,342,981	7,919	980,351	321,997	433,892	53,081	146,332
Imports							
1986 (b)	107,939	35	85,866	237,224	19,509	3,603	10,358
1985	138,954	6	73,089	186,284	11,011	4,628	12,942

(a) Includes Naphtha and Kerosine-based fuels: (b) Preliminary.

U.S. Oil Imports (a) (Add 000 b/d)

Year	Crude Oil	Other Products	Residual Fuel Oil	Total Imports	% of Total U.S. Supply
1986	4,111	1,300	650	6,061	37.5%
1985	3,201	1,356	510	5,067	32.3
1984	3,426	1,330	681	5,437	34.6

(a) Does not include Strategic Petroleum Reserve; (b) Preliminary.
Source: Energy Information Administration, Petroleum Supply Monthly, December 1986.

Origins of U.S. Oil Imports

	OPEC Sources		Arab OPEC		Hemispheres	
	Thous. b/d	% of total imports	Thous. b/d	% of total imports	Western Thous. b/d	Eastern Thous. b/d
1986	2,768	45.7	1,149	19.0	2,914	3,137
1985	1,830	36.1	472	9.3	2,855	2,130
1984	2,049	37.7	819	15.1	2,703	2,734

Source: Energy Information Administration, Petroleum Supply Monthly, December 1986.

	Total Well Completions			Proved Reserves				Supply (Add 000 b/d)	
Year	Total (a)	Dry	% Dry	Crude Oil (b)	Crude Production/ Reserve Ratio	Natural Gas (c)	Natural Gas Production/ Reserve Ratio	Domestic Crude & Natl. Gas Lqds.	Crude & Product Imports
1986 (d)	42,387	14,001	33.0	NA	NA	NA	NA	10,239	6,061
1985	71,359	21,699	30.4	28.416	9.3	193.4	10.6	10,580	5,067
1984	85,778	25,456	29.7	28,446	9.4	197.5	11.5	10,509	5,437

(a) Includes oil, gas, and dry completions, but not service wells; (b) Millions of bbl.; (c) Trillions of cubic feet; (d) Preliminary.
Source: Energy Information Administration, December 1986: American Petroleum Institute.

Top 10 Importers of Crude and Product

Company	Headquarters	Volume	% of U.S. Total
	CRUDE OIL AND PRODUCT		
Chevron Corp.	San Francisco	519	8.7%
Texaco Inc.	White Plains, N.Y.	456	7.6
Amerada Hess Corp.	New York	274	4.6
Shell Oil Co.	Houston, Tex.	257	4.3
Sun Company	Philadelphia, Pa.	243	4.1
Coastal Corp.	Houston, Tex.	239	4.0
Amoco Corp.	Chicago	231	3.9
Exxon	New York	227	3.8
Koch Industries	Wichita, Kan.	214	3.6
U.S. Steel Corp.*	Pittsburgh, Pa.	208	3.5
Total Top 10		2,868	48.1
Total U.S.		5,968	
*Marathon Petroleum Co.			
	CRUDE OIL ONLY		
Chevron Corp.	San Francisco	500	12.2
Texaco, Inc.	White Plains, N.Y.	416	10.1
Shell Oil Co.	Houston, Tex.	242	5.9
Amoco Corp.	Chicago	219	5.3
U.S. Steel Corp.*	Pittsburgh, Pa	197	4.8
Exxon Corp.	New York	191	4.6
Sun Company	Philadelphia, Pa.	187	4.5
Koch Industries	Wichita, Kan.	171	4.2
Standard Oil Co.	Cleveland, Ohio	165	4.0
Mobil Oil Corp.	New York	163	4.0
Total top 10		2,451	59.6
Total U.S.		4,111	
*Marathon Petroleum Co.			
	GASOLINE ONLY		
Northville Industries	Melville, N.Y.	33	11.1
Amerada Hess Corp.	New York	29	9.8
Texaco, Inc.	White Plains, N.Y.	18	6.1
Vitol S.A.	Coral Gables, Fla.	17	5.7
Global Petroleum Corp.	Waltham, Mass.	15	5.1%
Coastal Corp.	Houston, Tex.	13	4.4
Langham-Hill Petroleum	Charlottesville, Va.	12	4.1
Mobil Oil Corp.	New York	12	4.1
Oxbow Resources	Houston, Tex.	11	3.7
Pacific Resources	Honolulu, Hawaii	11	3.7
Total top 10		171	57.8
Total U.S.		296	
	DISTILLATE FUEL OIL		
Amerada Hess Corp.	New York	40	17.0
Global Petroleum Corp.	Waltham, Mass.	33	14.0
Coastal Corp.	Houston, Tex.	15	6.4
Charter Oil Co.	Jacksonville, Fla.	14	6.0
Northville Industries	Melville, N.Y.	14	6.0
Astroline Pacific	Long Beach, Calif.	10	4.3
Wyatt, Inc.	New Haven, Conn.	9	3.8
Metallgesellschaft Corp.	New York	8	3.4
Vitol S.A.	Coral Gables, Fla.	8	3.4
Pacific Resources	Honolulu, Hawaii	7	3.0
Total top 10		158	67.2
Total U.S.		235	
	RESIDUAL FUEL OIL		
Amerada Hess Corp.	New York	127	19.5
Coastal Corp.	Houston, Tex.	105	16.2
BP North America Petro.	Cleveland, Ohio	41	6.3
Charter Oil Co.	Jacksonville, Fla.	40	6.2
Scallop Petroleum Co.	New York	29	4.5
Sun Oil Inc.	Philadelphia, Pa.	29	4.5
Clarendon Marketing	Stamford, Conn.	22	3.4
Clark Oil Trading Co.	St. Louis, Mo.	22	3.4
Exxon Corp.	New York	18	2.8
Carey Energy Corp.	New York	16	2.5
Total top 10		449	69.1
Total U.S.		650	

Source: Energy Information Administration, Petroleum Supply Monthly.

U.S. Dependency on Crude and Product Imports

Net (imports minus exports) in thousands of b/d

	Net imports						Net imports as % of U.S. Petroleum products supplied		
	Total from All countries	From Arab OPEC Members	% from Arab OPEC	From all OPEC Members	% from All OPEC	U.S. Petroleum Products Supplied	Total from All countries	From Arab OPEC Members	From all OPEC Members
1986 Average	5,289	1,147	21.7%	2,759	52.2%	16,142	32.5%	7.1%	17.1%
1st Qtr.	4,083	843	20.6	2,038	49.9	16,055	25.4	5.3	12.7
2nd Qtr.	5,321	1,138	21.4	2,714	51.0	15,864	33.5	7.2	17.1
3rd Qtr.	6,202	1,323	21.3	3,527	56.8	16,177	38.4	8.2	20.2
4th Qtr.	5,522	1,279	23.2	3,003	55.4	16,447	33.5	7.8	18.2
1985 Average	4,286	470	11.0	1,821	42.3	15,726	27.3	3.0	11.6
1st Qtr.	3,570	331	9.3	1,371	38.4	15,859	22.5	2.1	8.6
2nd Qtr.	4,625	529	11.4	1,857	40.2	15,486	29.9	3.4	12.0
3rd Qtr.	4,135	298	7.2	1,780	43.0	15,536	26.6	1.9	11.5
4th Qtr.	4,803	730	15.2	2,266	47.2	16,025	30.0	4.6	14.1
1984 Average	4,715	817	17.3	2,037	43.2	15,726	30.0	5.2	13.0
1983 Average	4,312	630	14.6	1,843	42.7	15,231	28.3	4.1	12.1
1982 Average	4,298	852	19.8	2,136	49.7	15,296	28.1	5.6	14.0
1981 Average	5,401	1,844	34.1	3,315	61.4	16,058	33.6	11.5	20.6
1980 Average	6,385	2,549	39.9	4,293	67.2	17,056	37.3	14.9	25.2
1979 Average	7,985	3,054	38.2	5,633	70.5	18,513	43.1	16.5	30.4
1978 Average	8,002	2,962	37.0	5,747	71.8	18,847	42.5	15.7	30.5
1977 Average	8,565	3,184	37.2	6,190	72.3	18,431	46.5	17.3	33.6
1976 Average	7,090	2,423	34.2	5,063	71.4	17,461	40.6	13.9	29.0
1975 Average	5,846	1,382	23.6	3,599	61.2	16,322	35.8	8.5	22.0
1974 Average	5,892	752	12.8	3,277	55.6	16,653	35.4	4.5	19.7
1973 Average	6,025	914	15.2	2,991	49.6	17,038	34.8	5.3	17.3

Source: Energy Information Administration, Monthly Energy Review, December 1986, published April 1987.

Role of Imports in Domestic Demand

(Add 000 bbl.)

	Total Imports			Domestic Demand for Refined Products			
	Total (a)	b/d Avg.	% Change	Total	b/d Avg.	% Change	Imports as % of U.S. Demand
1986 (b)	2,212,267	6,061	20.0	5,891,830	16,142	3.0	38.0%
1985	1,849,455	5,067	(7.0)	5,739,990	15,726	—	35.0
1984	1,984,505	5,437	7.6	5,739,990	15,726	3.2	34.6
1983	1,843,615	5,051	(1.2)	5,559,315	15,231	(.04)	33.2
1982	1,866,245	5,113	(14.7)	5,583,040	15,296	(4.7)	33.4
1981	2,188,540	5,996	(13.2)	5,861,170	16,058	(5.9)	37.3
1980	2,521,785	6,909	(18.3)	6,225,440	17,056	(7.9)	40.5
1979	3,086,440	8,456	1.1	6,757,245	18,513	(1.8)	45.7
1978	3,052,495	8,363	(5.0)	6,879,155	18,847	2.2	44.0
1977	3,214,555	8,807	20.1	6,727,315	18,431	5.3	47.8
1976	2,676,411	7,313	20.8	6,390,750	17,461	7.2	41.9
1975	2,210,335	6,056	(0.9)	5,957,515	16,322	(2.0)	37.1
1974	2,230,947	6,112	(2.3)	6,078,239	16,653	(3.8)	36.7
1973	2,283,493	6,256	32.0	6,317,303	17,308	5.7	36.1
1972	1,735,314	4,741	20.8	5,990,316	16,367	7.6	29.0
1971	1,432,880	3,926	14.8	5,552,560	15,212	3.5	25.8
1970	1,248,062	3,419	8.0	5,364,473	14,697	4.0	23.3
1965	900,772	2,468	9.3	4,202,039	11,512	4.4	21.4
1960	664,111	1,815	2.0	3,585,820	9,797	2.8	18.5
1955	455,564	1,248	18.6	3,089,348	8,464	9.0	14.7
1950	310,261	850	31.8	2,392,974	6,556	13.0	13.0

(a) Crude oil and products but not crude for Strategic Petroleum Reserve; (b) Preliminary. Special note: Data for 1977 through 1985 are restated to reflect EIA information rather than other sources used in 1984.

Source: American Petroleum Institute, Basic Petroleum Data Book for 1950 through 1976; Energy Information Administration, Monthly Energy Review for 1977 through 1986.

Petroleum Products Imported

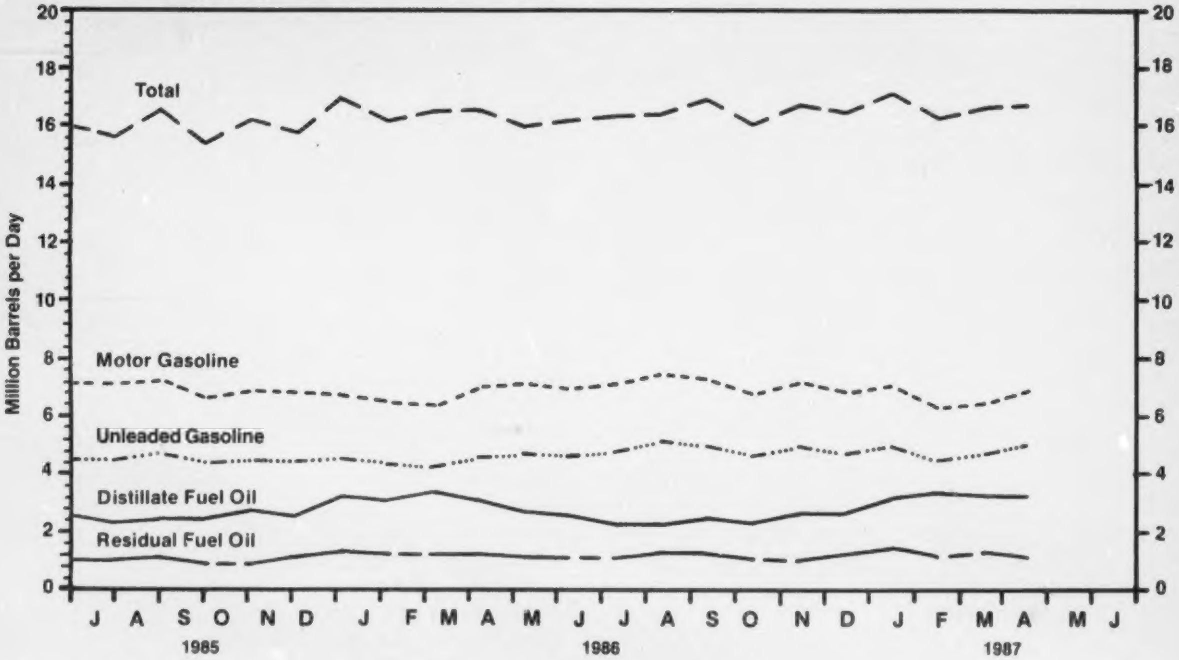
(Thousands of b/d)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986												
Total Motor Gasoline	366	393	240	357	460	450	376	388	363	349	304	320
Leaded	72	69	27	44	93	63	36	30	43	41	48	29
Unleaded	269	256	183	197	295	304	281	258	247	228	205	234
Blending Components	25	68	30	116	72	82	59	101	73	80	51	57
Jet Fuel	27	32	29	39	52	85	100	74	71	36	53	41
Distillate Fuel Oil	312	129	217	146	145	165	293	355	240	246	233	326
Residual Fuel Oil	629	577	571	504	665	687	668	799	631	598	562	894
Other Petroleum Products(a)	722	485	580	554	666	740	698	633	690	670	730	589
1985												
Total Motor Gasoline	254	455	556	563	569	437	505	365	354	380	475	459
Leaded	75	109	215	177	133	197	75	57	62	132	109	145
Unleaded	128	239	266	317	347	200	351	248	252	192	301	241
Blending Components	50	107	75	69	89	41	79	60	40	56	64	73
Jet Fuel	68	38	47	17	30	35	51	13	34	55	42	37
Distillate Fuel Oil	272	143	156	253	197	152	95	81	222	262	280	287
Residual Fuel Oil	568	580	477	383	394	400	437	424	617	541	627	681
Other Petroleum Products(a)	538	591	651	698	856	717	659	720	587	645	693	671
1984												
Total Motor Gasoline	281	358	453	404	465	367	330	323	426	436	378	357
Leaded	98	162	197	178	170	103	68	96	166	113	134	133
Unleaded	133	137	158	140	176	193	179	146	183	195	151	175
Blending Components	50	59	98	85	119	71	83	81	77	128	93	49
Jet Fuel	65	114	49	103	56	52	40	98	33	56	36	39
Distillate Fuel Oil	299	454	115	220	253	256	199	259	291	421	316	190
Residual Fuel Oil	1059	1151	636	651	565	685	597	572	606	461	585	627
Other Petroleum Products(a)	672	665	579	577	698	576	595	543	553	654	688	582

(a) Includes kerosine, unfinished oils, motor gasoline blending components, liquefied petroleum gas and other oils.

Source: Energy Information Administration, Weekly Status Reports.

PETROLEUM PRODUCTS SUPPLIED
(Million Barrels per Day)



Source: Energy Information Administration, weekly Petroleum Status Reports.

Petroleum Products Supplied

(Millions of b/d)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986												
Finished Motor Gasoline	6.5	6.4	7.0	7.1	7.0	7.2	7.5	7.4	6.9	7.2	6.9	7.1
Leaded	2.1	2.1	2.3	2.3	2.3	2.3	2.3	2.3	2.1	2.2	2.0	1.9
Unleaded	4.4	4.3	4.7	4.8	4.7	4.9	5.2	5.1	4.8	5.1	4.9	5.1
Jet Fuel	1.3	1.3	1.2	1.3	1.2	1.3	1.3	1.3	1.3	1.3	1.4	1.4
Distillate Fuel Oil	3.2	3.5	3.2	2.9	2.8	2.5	2.5	2.7	2.5	2.9	2.9	3.3
Residual Fuel Oil	1.4	1.4	1.4	1.3	1.3	1.3	1.5	1.5	1.3	1.2	1.4	1.6
Other	3.5	3.4	3.5	3.1	3.5	3.7	3.3	3.7	3.8	3.8	3.6	3.4
Total	15.9	16.1	16.2	15.7	15.9	16.0	16.1	16.7	15.8	16.4	16.1	16.9
1985												
Finished Motor Gasoline	6.3	6.6	6.7	7.0	7.1	7.0	7.0	7.2	6.6	6.9	6.8	6.8
Leaded	2.3	2.5	2.5	2.6	2.6	2.5	2.5	2.5	2.3	2.4	2.3	2.2
Unleaded	4.0	4.1	4.2	4.4	4.4	4.5	4.5	4.8	4.4	4.5	4.5	4.6
Jet Fuel	1.2	1.2	1.2	1.3	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3
Distillate Fuel Oil	3.5	3.3	3.1	2.8	2.6	2.6	2.4	2.6	2.6	2.9	2.7	3.3
Residual Fuel Oil	1.5	1.4	1.2	1.1	1.2	1.0	1.1	1.2	1.0	1.0	1.3	1.5
Other	3.6	3.7	3.3	3.3	3.5	3.7	3.7	3.8	3.7	3.8	3.4	3.7
Total	16.1	16.1	15.4	15.5	15.5	15.5	15.4	16.1	15.1	15.9	15.5	16.6
1984												
Finished Motor Gasoline	6.3	6.2	6.5	6.7	6.9	7.1	6.8	7.1	6.6	6.7	6.8	6.6
Leaded	2.7	2.6	2.8	2.8	2.9	2.9	2.8	2.8	2.6	2.6	2.6	2.4
Unleaded	3.6	3.6	3.8	3.9	4.0	4.2	4.1	4.3	4.0	4.1	4.2	4.2
Jet Fuel	1.2	1.1	1.1	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2
Distillate Fuel Oil	3.5	2.8	3.3	2.9	2.8	2.6	2.5	2.6	2.7	2.8	2.8	2.9
Residual Fuel Oil	2.0	1.7	1.6	1.4	1.2	1.3	1.2	1.3	1.2	1.1	1.4	1.2
Other	3.8	3.5	3.5	3.4	3.5	3.6	3.7	3.9	3.6	3.8	3.5	3.5
Total	16.8	15.4	16.1	15.6	15.6	15.7	15.5	16.1	15.2	15.6	15.6	15.4

Source: Energy Information Administration, Weekly Status Reports.

Crude and Product Imports by PAD (a)

(Add 000 b/d)

PAD 1*

Net crude imports: 1,056,000 b/d.
Net product imports: 1,312,000 b/d.
Major Sources: Venezuela, Virgin Islands, Nigeria, United Kingdom
Leading importers: Amerada Hess, Texaco, Sun, Chevron

	1986	% Chng. '86 vs. '85	1985	1984	1983	1982
Finished gasoline	251	(16%)	298	254	214	148
Blending Components	43	(10%)	48	46	14	21
Unfinished Oils	82	28%	64	54	88	64
Liquefied Petro. gases	36	50%	24	19	12	14
Distillate	216	22%	177	251	154	82
Residual	593	32%	449	598	609	646
Other products	92	(7%)	99	122	67	62
Total products	1,312	13%	1,159	1,345	1,157	1,036
Crude oil	1,056	8%	977	944	817	958
Total crude and products	2,368	11%	2,137	2,289	1,974	1,994

*PAD 1 consists of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, West Virginia, Virginia, North and South Carolina, Georgia and Florida.

PAD 2*

Net crude imports: 764,800 b/d.
Net product imports: 72,500 b/d.
Major sources: Canada, Saudi Arabia, Mexico, Nigeria.
Leading importers: Koch, Ashland, Shell, Apex.

	1986	% Chng. '86 vs. '85	1985	1984	1983	1982
Finished gasoline	5	(58%)	12	4	6	2
Blending components	1	—	(s)	(s)	4	9
Unfinished Oils	0	—	8	10	11	7
Liquefied Petro. gases	82	(31%)	119	134	133	152
Distillate	8	14%	7	8	8	1
Residual	4	100%	2	6	15	11
Other products	7	(13%)	8	15	5	5
Total products	107	(32%)	157	177	181	187
Crude oil	781	34%	590	499	530	580
Total crude and products	888	19%	746	676	711	767

*PAD 2 consists of North and South Dakota, Nebraska, Kansas, Oklahoma, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan, Indiana, Ohio, Kentucky, and Tennessee: (s) Less than 500 b/d.

PAD 3*

Net crude imports: 2,037,000 b/d.
Net product imports: 100,000 b/d.
Major Sources: Mexico, Saudi Arabia, Venezuela, Nigeria.
Leading importers: Chevron, Texaco, U.S. Steel, Arco.

	1986	% Chng. '86 vs. '85	1985	1984	1983	1982
Finished gasoline	7	(65%)	20	18	4	3
Blending components	9	50%	6	13	11	7
Unfinished oils	152	(37%)	243	153	129	96
Liquefied Petro. gases	98	444%	18	13	19	28
Distillate	1	(50%)	2	3	6	4
Residual	33	(27%)	45	64	54	98
Other products	94	27%	74	90	43	37
Total products	393	(4%)	409	354	266	271
Crude oil	2,037	44%	1,419	1,747	1,734	1,722
Total crude and products	2,430	33%	1,827	2,101	2,000	1,993

*PAD 3 consists of Alabama, Mississippi, Arkansas, Louisiana, Texas and New Mexico.

(a)The summaries at the top are 1986 nets, i.e., imports minus exports; the balance of the figures are total imports.

Crude and Product Imports by PAD (continued) (a)

(Add 000 b/d)

PAD 4*
Net crude imports: 54,600 b/d.
Net product imports: 20,800 b/d.
Major source: Canada
Leading importers: Du Pont, Cenex, Exxon, Flying J.

	1986	% Chng. '86 vs. '85	1985	1984	1983	1982
Finished gasoline	2	—	2	2	1	0
Blending components	(s)	—	0	0	(s)	(s)
Unfinished oils	0	—	0	0	2	(s)
Liquefied Petro. gases	12	(20%)	15	15	12	16
Distillate	3	(25%)	4	4	1	(s)
Residual	(s)	—	(s)	(s)	1	(s)
Other products	5	25%	4	4	3	3
Total products	21	(16%)	25	24	21	20
Crude oil	54	38%	39	33	38	40
Total crude and products	75	17%	64	58	59	60

*PAD 4 consists of Montana, Idaho, Wyoming, Utah and Colorado; (s) = less than 500 b/d.

PAD 5*
Net crude imports: 44,800 b/d.
Net product exports: 154,100 b/d.
Major sources: Indonesia, Canada, Hawaiian FTZ, People's Republic of China.
Leading importers: Chevron, Shell, Pacific, Unocal.

	1986	% Chng. '86 vs. '85	1985	1984	1983	1982
Finished gasoline	32	33%	48	21	22	45
Blending components	15	25%	12	23	18	6
Unfinished oils	5	150%	2	13	5	8
Liquefied Petro. gases	13	30%	10	14	14	16
Distillate	8	(20%)	10	6	5	6
Residual	20	54%	13	13	21	21
Other products	23	21%	19	20	12	10
Total products	117	1%	116	111	97	111
Crude oil	182	3%	177	203	210	188
Total crude and products	299	2%	293	313	307	299

*PAD 5 consists of Arizona, Nevada, California, Oregon, Washington, Alaska and Hawaii.

ALL PADS—U.S. Totals.
Net crude imports: 3,957,000 b/d.
Net product imports: 1,332,000 b/d.
Major sources } see related tables in this section
Leading importers }

	1986	% Chng. '86 vs. '85	1985	1984	1983	1982
Finished gasoline	296	(22%)	381	299	247	197
Blending components	68	1%	67	83	47	42
Unfinished oils	239	(25%)	318	231	234	174
Liquefied Petro. gases	241	29%	187	195	190	226
Distillate	235	18%	200	272	174	93
Residual	650	28%	510	681	699	776
Other products	221	8%	204	251	130	117
Total products	1,950	5%	1,866	2,011	1,722	1,625
Crude oil	4,111	28%	3,201	3,426	3,329	3,488
Total crude and products	6,061	20%	5,067	5,437	5,051	5,113

Source: Energy Information System, Petroleum Supply Monthly, December 1986, published March 1987

(a) The summaries at the top are 1986 nets, i.e., imports minus exports; the balance of one figures are total imports.

Shell Storage Capacity at Refineries and Blending Plants[a]

(As of Jan. 1, 1986) **(Add 000 bbl.)**

	Gasoline			Fuel Oil					
	Finished Leaded	Finished Unleaded	Blending Components	Distillates	Residual	Asphalt and Road Oil	Total Products(b)	Crude Oil	Total Crude and Products
PAD District 1									
Delaware, Maryland	0	774	1,970	3,139	131	1,079	9,749	3,162	12,931
Florida, Georgia, Virginia	429	558	826	1,088	447	530	4,456	2,535	6,991
New Jersey	3,540	4,307	4,592	9,986	1,416	1,571	41,055	9,887	50,942
New York, Connecticut	3,021	3,106	61	1,966	216	0	11,053	694	11,747
North Carolina	107	24	56	52	0	0	269	0	269
Pennsylvania	1,811	3,112	3,058	5,432	1,178	2,111	28,015	11,581	39,596
West Virginia	87	56	0	124	0	246	576	278	854
Total	**8,995**	**11,937**	**10,363**	**21,787**	**4,419**	**3,928**	**95,173**	**28,157**	**123,330**
PAD District 2									
Illinois	4,174	4,358	6,129	7,920	2,060	996	44,105	8,262	52,367
Indiana	2,106	2,437	4,237	6,101	2,399	630	29,712	3,544	33,256
Kansas	2,731	2,312	1,504	3,687	1,044	12	19,427	3,150	22,577
Kentucky, Tennessee	730	959	475	1,460	1,255	163	9,169	2,000	11,169
Michigan	491	541	537	1,714	949	0	7,986	1,057	9,043
Minnesota, Wisconsin	1,378	1,260	641	2,819	2,684	0	11,176	3,252	14,428
Missouri, Nebraska	464	432	0	103	0	0	1,016	0	1,016
North Dakota	375	333	961	1,029	0	0	3,013	482	3,495
Ohio	1,140	2,021	2,598	2,211	688	266	16,648	2,788	19,436
Oklahoma	2,544	2,007	2,615	4,935	1,694	1,049	22,712	4,375	27,087
Total	**16,133**	**16,660**	**19,697**	**31,979**	**12,173**	**3,116**	**164,964**	**28,910**	**193,874**
PAD District 3									
Alabama	304	393	691	745	612	0	4,734	2,618	7,352
Arkansas	116	166	148	704	769	138	2,168	1,568	3,736
Louisiana	3,476	6,193	11,976	17,496	1,505	3,128	91,303	25,676	116,979
Mississippi	950	1,381	1,908	3,251	1,229	0	11,208	4,239	15,447
New Mexico	325	199	614	655	428	0	3,490	985	4,475
Texas	14,277	19,366	24,881	25,777	3,571	9,739	217,866	62,113	279,979
Total	**19,448**	**27,698**	**40,218**	**48,628**	**8,114**	**13,005**	**330,769**	**97,119**	**427,968**
PAD District 4									
Colorado	488	227	613	426	775	466	3,908	462	4,370
Montana	791	561	1,454	1,624	255	1,403	8,218	1,598	9,816
Utah	741	552	1,121	1,209	404	234	5,198	1,451	6,649
Wyoming	1,432	842	1,638	1,903	525	2,526	10,749	1,513	12,262
Total	**3,452**	**2,182**	**4,826**	**5,162**	**1,959**	**4,629**	**28,073**	**5,024**	**33,097**
PAD District 5									
Alaska	261	231	701	1,027	1,270	301	4,773	1,718	6,491
California	5,251	9,149	14,748	9,740	16,131	3,121	91,394	35,950	127,344
Washington	1,305	1,442	2,608	2,230	1,397	609	17,172	8,113	25,285
Other states(c)	84	94	311	247	695	596	2,677	2,369	5,046
Total	**6,901**	**10,916**	**18,368**	**13,244**	**19,493**	**4,829**	**116,016**	**48,150**	**164,166**
U.S. Total	**54,929**	**69,393**	**93,472**	**120,800**	**66,065**	**34,564**	**734,995**	**207,440**	**942,435(d)**

(a) Shell storage capacity: the design capacity of the tank; (b) Other products included in product total are lubricating oils, propane/propylene, butane/butylene, jet fuels, ethane/ethylene, isobutane, pentanes plus other hydrocarbons, hydrogen, alcohol, unfinished oils, finished aviation gasoline, special naphthas, wax, petroleum coke and gas; (c) other states are Hawaii, Nevada and Oregon; (d) U.S. total includes 52,136,000 bbl. capacity at shutdown refineries.

Source: Energy Information Administration, Petroleum Supply Annual 1985, Vol. 1, May 1986.

Working Storage Capacity at Refineries and Blending Plants[a]

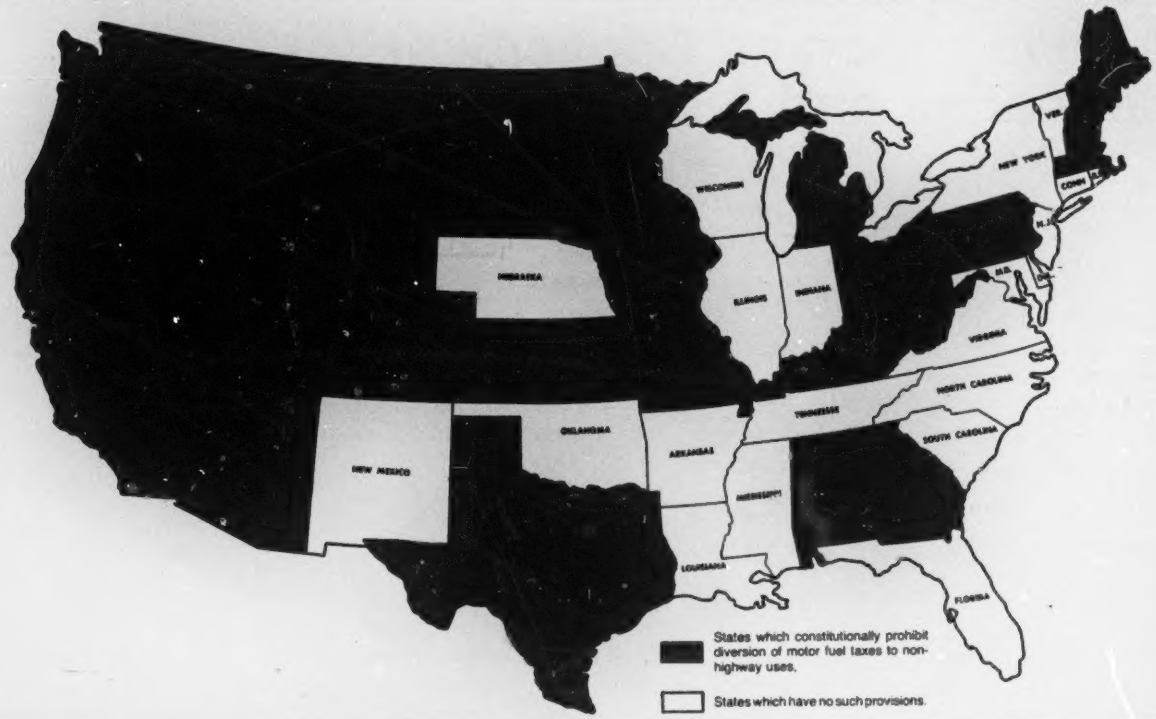
(As of Jan. 1, 1986)

(Add 000 bbl.)

	Gasoline			Fuel Oil					
	Finished Leaded	Finished Unleaded	Blending Components	Middle Distillates	Residual	Asphalt and Road Oil	Total Products(b)	Crude Oil	Total Crude Oil and Products
PAD District 1									
Delaware, Maryland	0	685	1,627	2,623	119	1,025	8,332	2,174	11,046
Florida, Georgia, Virginia	371	477	517	954	366	502	3,885	2,168	6,053
New Jersey	3,179	3,683	3,850	9,158	3,242	1,202	36,235	8,406	44,641
New York, Connecticut	2,956	3,027	59	1,869	1,356	184	10,586	595	11,181
North Carolina	96	22	55	47	0	0	250	0	250
Pennsylvania	1,623	2,783	2,713	4,989	2,740	1,020	25,542	10,230	35,772
West Virginia	68	47	0	97	43	0	482	217	699
Total	**8,293**	**10,724**	**8,821**	**19,737**	**7,866**	**3,933**	**85,312**	**24,330**	**109,642**
PAD District 2									
Illinois	3,543	3,636	5,251	7,264	1,731	1,932	39,087	7,028	46,115
Indiana	1,890	2,149	3,587	5,473	2,443	2,156	26,009	3,059	29,068
Kansas	2,541	2,160	1,334	3,450	560	981	17,980	2,893	20,873
Kentucky, Tennessee	689	902	446	1,366	496	1,179	8,521	1,869	10,390
Michigan	457	508	494	1,630	546	907	7,455	998	8,453
Minnesota, Wisconsin	1,277	1,140	607	2,664	928	2,513	10,443	2,917	13,360
Missouri, Nebraska	453	430	0	101	0	0	1,004	0	1,004
North Dakota	323	282	796	869	88	0	2,521	421	2,942
Ohio	1,060	1,864	2,324	2,075	502	647	15,305	2,507	17,812
Oklahoma	2,360	1,856	2,524	4,642	515	1,567	21,193	3,870	25,063
Total	**14,598**	**14,929**	**17,363**	**29,534**	**7,809**	**11,871**	**149,518**	**25,562**	**175,080**
PAD District 3									
Alabama	251	338	584	623	864	483	3,974	2,265	6,239
Arkansas	104	149	138	652	86	694	1,979	1,413	3,392
Louisiana	3,002	5,175	10,007	15,360	8,637	1,246	79,302	21,280	100,582
Mississippi	868	1,218	1,793	3,006	563	1,129	10,264	3,805	14,069
New Mexico	281	162	560	583	126	413	3,141	859	4,000
Texas	12,644	17,137	21,563	22,842	14,041	3,192	190,742	53,077	243,819
Total	**17,850**	**24,179**	**43,066**	**24,317**	**24,317**	**7,157**	**289,402**	**82,699**	**372,101**
PAD District 4									
Colorado	452	205	565	405	738	450	3,660	401	4,061
Montana	703	494	1,308	1,526	237	1,308	7,560	1,388	8,948
Utah	635	468	986	1,111	374	211	4,629	1,316	5,945
Wyoming	1,255	745	1,443	1,760	486	2,323	9,670	1,408	11,078
Total	**3,045**	**1,912**	**4,302**	**4,802**	**1,835**	**4,292**	**25,519**	**4,513**	**30,032**
PAD District 5									
Alaska	241	210	660	957	1,210	274	4,424	1,592	6,016
California	4,611	7,844	12,903	8,178	14,619	2,789	80,204	30,665	110,869
Washington	1,192	1,282	2,314	2,025	1,283	580	15,428	7,136	22,564
Other states(c)	77	87	239	232	671	570	2,485	2,327	4,812
Total	**6,121**	**9,423**	**16,116**	**11,932**	**17,783**	**4,213**	**102,541**	**41,720**	**144,261**
U.S. Total	**49,207**	**61,167**	**81,247**	**109,071**	**59,610**	**31,466**	**652,292**	**178,824**	**831,116**

(a) Working storage capacity: the difference in volume between the maximum safe fill capacity and tank bottoms, as of Jan. 1, 1986; (b) other products included in the product total are lubricating oils, propane/propylene, butane/butylene, jet fuels, ethane/ethylene, isobutane, pentanes plus other hydrocarbons, hydrogen, alcohol, unfinished oils, finished aviation gasoline, special naphthas, wax, petroleum coke and gas; (c) other states are Hawaii, Nevada and Oregon; (d) U.S. total includes 52,136,000 bbl. capacity at shutdown refineries.

Source: Energy Information Administration, Petroleum Supply Annual, Vol. 1, published May 1986.



State Tax Collections

State	State Gasoline tax rates per gal. in 1986	Total state motor fuel tax revenues (Add 000) 1986 (a)	1985	% Change
Alabama	13¢	$380,031	$304,132	25.0%
Alaska	8	23,236	24,261	(4.2)
Arizona	16	303,636	233,373	30.1
Arkansas	13.5	188,980	169,804	11.3
California	9	1,192,221	1,145,727	4.1
Colorado	18	272,241	185,185	47.0
Connecticut	17	290,211	215,755	34.5
Delaware	13	40,274	39,574	1.8
Dist. of Columbia	15.5	27,928	24,788	12.7
Florida	9.7	601,560	560,666	7.3
Georgia	7.5	301,027	284,035	5.6
Hawaii	11	38,929	32,625	19.3
Idaho	14.5	75,040	76,192	(1.5)
Illinois	13	803,141	711,151	12.9
Indiana	14	477,062	417,031	14.4
Iowa	16	249,550	196,264	27.1
Kansas	11	161,191	150,601	7.0
Kentucky	15	265,875	191,547	38.9
Louisiana	16	369,858	351,978	4.9
Maine	14	95,359	85,373	11.7
Maryland	13.5	329,648	304,512	8.3
Massachusetts	11	289,960	285,988	1.4
Michigan	15	687,300	625,086	9.9
Minnesota	17	358,566	341,420	5.0
Mississippi	9	144,464	137,576	5.0
Missouri	7	214,781	209,409	2.6
Montana	17	82,735	79,584	4.0
Nebraska	17.1	157,691	128,199	22.0
Nevada	13	78,312	71,980	8.8
New Hampshire	14	80,590	71,239	13.1
New Jersey	8	331,631	313,122	5.9
New Mexico	11	105,822	101,181	4.7
New York	8	731,721	491,755	48.8
North Carolina	15.5	514,609	419,903	22.6
North Dakota	13	56,045	52,890	6.0
Ohio	12	676,920	549,637	23.1
Oklahoma	10	208,674	196,832	6.0
Oregon	11	165,550	126,157	31.2
Pennsylvania	12	849,664	896,880	(5.3)
Rhode Island	15	61,950	48,403	28.0
South Carolina	13	257,413	251,254	2.5
South Dakota	13	61,115	51,990	17.5
Tennessee	17	497,678	327,949	51.7
Texas	10	1,039,300	990,886	4.9
Utah	14	126,052	112,976	11.6
Vermont	13	38,090	37,949	0.4
Virginia	15	472,110	400,810	17.8
Washington	18	390,279	399,671	(2.3)
West Virginia	10.5	146,852	155,619	(5.6)
Wisconsin	17.5	400,372	374,029	7.0
Wyoming	8	36,414	36,818	(1.1)
Total	—	$15,749,658	$13,992,664	12.6%

(a) Estimated and does not include diesel or LPG taxes.

Source: Federal Highway Administration, Table SS85-2, published October, 1986.

Federal (Add 000)

Year	Gasoline(a)	Diesel and special fuels(a)	Lube oil(b)	Total
1986(c)	$7,905,848	$2,479,286	—	$10,155,134
1985	7,783,314	2,390,258	(9,741)	10,173,572
1984	7,765,951	1,470,064	(10,155)	9,225,860
1983	6,091,841	957,988	8,847	7,058,676
1982	4,120,013	594,083	76,181	4,790,277
1981	3,801,795	570,477	74,695	4,446,967
1980	4,019,481	518,352	78,835	4,616,668
1975	3,884,483	362,675	66,124	4,313,282
1970	3,408,505	264,815	65,862	3,739,182

(a) Taxes went up from 4¢ gal. to 9¢ gal. on April 1, 1984. Totals exclude mass transit account taxes which went into effect April 1, 1983. Mass transit account taxes amounted to $519.6-million in 1983, and $1.2-billion in 1984.

(b) Lube oil tax of 4¢ gal. was discontinued in 1983 and 1984 deficit represents paybacks.

(c) Figures for 1986 are fiscal year gross collections that went to the Highway Trust Fund, since net IRS calendar year information was not available. All other figures represent calendar year net collections after refunds and include the taxes the federal government pays on its own purchases.

Source: U.S. Department of Transportation, Federal Highway Administration.

State and Federal Gasoline Taxes—1986

(¢ per gal.)

	State gasoline tax rate	State gasohol tax rate	State diesel tax rate	State sales or special taxes*	State + 9.0¢ Federal tax
Alabama	13.0	10.0	14.0	—	22.0
Alaska	8.0	0.0	8.0	—	17.0
Arizona	16.0	16.0	16.0	—	25.0
Arkansas	13.5	13.5	12.5	—	22.5
California	9.0	9.0	9.0	yes	18.0
Colorado	18.0	18.0	20.5	—	27.0
Connecticut	17.0	16.0	17.0	yes	26.0
Delaware	13.0	13.0	13.0	—	22.0
Dist. of Col.	15.5	15.5	15.5	—	24.5
Florida	9.7	7.7	9.7	—	18.7
Georgia	7.5	7.5	7.5	yes	16.1
Hawaii	11.0	11.0	11.0	yes	20.0
Idaho	14.5	10.5	14.5	—	23.5
Illinois	13.0	13.0	15.5	yes	22.0
Indiana	14.0	14.0	15.0	yes	23.0
Iowa	16.0	15.0	18.5	—	25.0
Kansas	11.0	8.0	13.0	—	20.0
Kentucky	15.0	15.0	12.0	—	24.0
Louisiana	16.0	16.0	16.0	—	25.0
Maine	14.0	11.0	14.0	—	23.0
Maryland	13.5	13.5	13.5	—	22.5
Massachusetts	11.0	11.0	11.0	—	20.0
Michigan	15.0	15.0	15.0	yes	24.0
Minnesota	17.0	14.5	17.0	—	26.0
Mississippi	9.0	9.0	10.0	yes	18.0
Missouri	7.0	7.0	7.0	—	16.0
Montana	17.0	17.0	17.0	—	26.0
Nebraska	18.2	15.1	18.2	—	27.2
Nevada	13.0	12.0	13.0	—	22.0
New Hampshire	14.0	14.0	14.0	—	23.0
New Jersey	8.0	0.0	11.0	—	17.0
New Mexico	11.0	0.0	11.0	—	20.0
New York	8.0	8.0	10.0	yes	17.0
North Carolina	15.75	15.75	15.75	—	24.75
North Dakota	13.0	5.0	13.0	—	22.0
Ohio	12.0	12.0	12.0	—	21.0
Oklahoma	10.0	10.0	10.0	—	19.0
Oregon	12.0	12.0	12.0	—	21.0
Pennsylvania	12.0	12.0	12.0	yes	21.0
Rhode Island	15.0	15.0	15.0	yes	24.0
South Carolina	13.0	7.0	13.0	—	22.0
South Dakota	13.0	11.0	13.0	—	22.0
Tennessee	17.0	13.0	15.0	—	26.0
Texas	15.0	11.0	15.0	—	24.0
Utah	14.0	14.0	14.0	—	23.0
Vermont	13.0	13.0	14.0	—	22.0
Virginia	17.5	17.5	16.0	yes	26.5
Washington	18.0	16.2	18.0	—	27.0
West Virginia	15.35	15.35	15.35	yes	24.35
Wisconsin	17.5	17.5	17.5	—	26.5
Wyoming	8.0	8.0	8.0	—	17.0

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* California: 4.75% sales tax; Connecticut: 2% oil company gross receipts tax; Georgia: 3% tax on retail price; Hawaii: 4% sales tax; Illinois: 6% sales tax; Indiana: 5% sales tax; Michigan: 4% sales tax; Mississippi: 6% sales tax; New York: 4% sales tax and 2.75% of gross receipts from sale of petroleum products; Pennsylvania: 6% franchise tax on gross receipts; Rhode Island: 2% of gross earnings of oil companies; Virginia: 3% of average wholesale price of taxable petroleum products; West Virginia: 4.85¢ gal.

Source: American Petroleum Institute.

Net Gasoline Tax Revenues by States

(Thousands of Dollars)

	1986	1985	1980	1975	1970	State + 9.0¢ Federal tax on gasoline*
Alabama	$306,230	$245,035	$172,922	$148,571	$116,760	22.0¢
Alaska	22,120	24,144	26,175	18,015	10,372	17.0
Arizona	298,560	229,543	118,158	101,624	64,974	25.0
Arkansas	188,980	169,804	113,166	108,581	74,987	22.5
California	1,186,290	1,140,251	854,185	743,732	672,410	18.0
Colorado	272,105	185,088	113,442	91,303	71,801	27.0
Connecticut	285,922	212,503	153,155	138,471	99,191	26.0
Delaware	40,250	39,552	29,319	29,707	18,252	22.0
Dist. of Col.	27,900	24,753	37,576	20,484	16,370	24.5
Florida	592,670	552,407	417,133	362,518	225,399	18.7
Georgia	295,125	278,403	330,485	228,159	154,699	16.1
Hawaii	38,910	32,609	34,778	21,218	17,723	20.0
Idaho	74,965	76,086	52,793	37,112	25,330	23.5
Illinois	721,600	639,106	388,097	374,414	311,313	22.0
Indiana	476,100	416,034	256,149	242,764	192,795	23.0
Iowa	248,105	193,555	167,463	118,923	100,831	25.0
Kansas	161,030	150,421	118,937	94,295	81,402	20.0
Kentucky	265,875	191,547	187,446	168,746	104,615	24.0
Louisiana	369,120	351,109	188,281	153,397	119,841	25.0
Maine	95,340	85,350	51,652	50,609	36,557	23.0
Maryland	314,550	290,548	186,658	176,871	111,326	22.5
Massachussetts	289,960	285,988	212,035	179,913	135,816	20.0
Michigan	687,300	625,063	473,593	397,262	273,735	24.0
Minnesota	357,850	340,704	204,955	143,993	122,800	26.0
Mississippi	136,030	129,522	127,647	127,390	88,502	18.0
Missouri	213,500	208,208	203,177	178,793	115,359	16.0
Montana	82,078	78,966	51,089	36,470	28,766	26.0
Nebraska	157,675	129,180	104,331	81,127	67,781	27.2
Nevada	78,000	71,662	34,625	25,787	24,054	22.0
New Hampshire	74,620	66,231	48,046	36,096	23,865	23.0
New Jersey	331,300	312,791	288,764	278,567	200,318	17.0
New Mexico	102,740	98,149	69,999	57,690	42,516	20.0
New York	731,648	491,730	474,798	499,921	374,821	17.0
North Carolina	501,568	409,450	295,143	265,739	213,709	24.75
North Dakota	55,380	52,242	33,488	24,916	19,819	22.0
Ohio	676,290	549,637	397,133	371,404	320,166	21.0
Oklahoma	206,200	194,567	129,545	111,291	90,867	19.0
Oregon	165,220	125,967	92,880	81,696	64,485	21.0
Pennsylvania	846,279	892,469	575,891	455,400	344,966	21.0
Rhode Island	61,950	48,403	39,260	31,828	27,699	24.0
South Carolina	123,110	247,003	173,412	127,904	87,238	22.0
South Dakota	60,450	51,406	41,809	29,853	24,012	22.0
Tennessee	447,150	294,541	226,785	173,101	130,625	26.0
Texas	1,039,200	990,886	480,946	395,221	312,349	24.0
Utah	125,300	112,265	74,074	48,717	37,805	23.0
Vermont	38,090	37,949	21,745	21,703	16,094	22.0
Virginia	475,685	400,424	275,141	264,814	146,477	26.5
Washington	390,240	399,635	254,637	161,514	140,878	27.0
West Virginia	95,235	100,947	101,467	73,042	49,944	24.35
Wisconsin	400,372	374,029	194,684	156,116	130,512	26.5
Wyoming	34,000	34,278	37,576	20,484	16,370	17.0
Total	**$15,391,907**	**$13,683,250**	**$9,736,915**	**$8,320,286**	**$6,298,746**	**22.3¢**
% Chng over previous year	**+12.5%**	**+40.5%**	**+17.0%**	**+32.1%**	**—**	**(Average)**

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*Does not include sales and special taxes levied by some states.

Source: Federal Highway Administration Table SS85-2 (October 1986) for 1986 and 1985 estimates and preliminary figures: 1980, 1975 and 1970 from American Petroleum Institute, Federal and State Motor Fuel Taxes, Discussion Paper 050, published March 1987.

Tire Shipments Hold Own in 1986

Paced by a 2.2% decline in original equipment and a 10.3% decrease in exports, tire shipments just about held their own in 1986. The Rubber Manufacturers Assn. said a 2% increase in replacement tire shipments for passenger cars and a 0.9% increase in replacements for buses and trucks saved the day by a narrow margin.

'86 vs. '85	Passenger	Bus/ Truck	Equipment	Total by Type of Market
Original equipment	(0.8)%	(10.9)%	(0.1)%	(2.2)%
Replacement	2.0	0.9	(3.2)	0.2
Export	(12.8)	(2.5)	(0.3)	(10.3)
Total	**0.9**	**(1.2)**	**(5.3)**	**0.4**

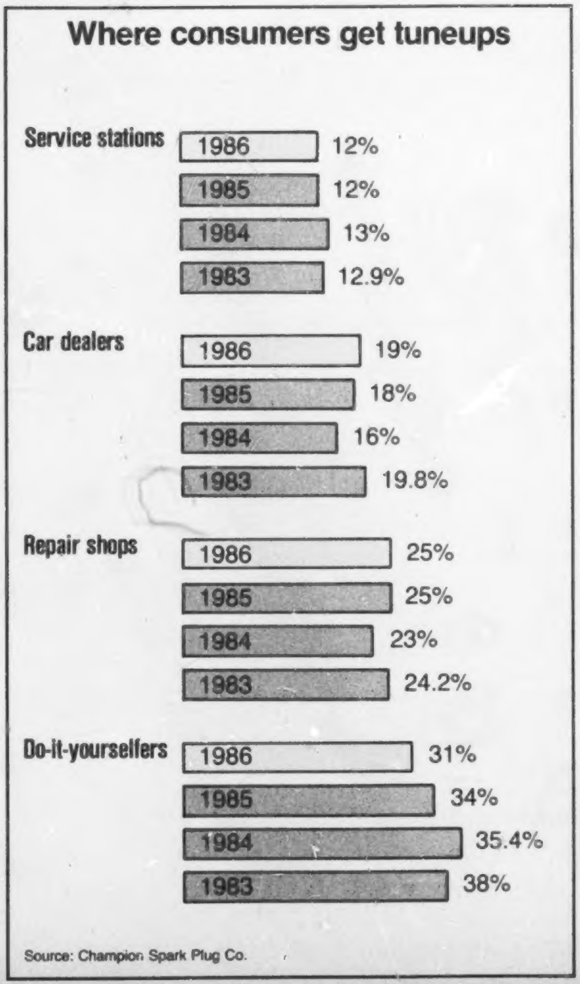
Source: Rubber Manufacturers Assn., Monthly Statistical Report.

Auto, Truck and Farm Shipments

Type of Tire (Add 000)

	Passenger	% of Market	Bus/ Truck	% of Market	Farm Equipment	% of Market	Total of Market Type	% of Total
1986								
Original Equipment	54,392	88.1%	6,859	11.1%	512	0.8%	61,763	25.1%
Replacement	144,267	80.6	32,392	18.1	2,319	1.3	178,978	72.7
Export	4,032	73.3	1,302	23.7	170	3.1	5,504	2.2
Total	**202,691**	**82.3**	**40,533**	**16.5**	**3,001**	**1.2**	**246,225**	—
1985								
Original Equipment	54,839	86.9%	7,698	12.2%	599	0.9%	63,136	24.9%
Replacement	141,455	80.4	32,098	18.2	2,395	1.4	175,948	71.8
Export	4,625	75.4	1,335	21.8	175	2.9	6,135	2.5
Total	**200,919**	**81.9**	**41,131**	**16.8**	**3,169**	**1.3**	**245,219**	—

Source: Rubber Manufacturers Assn., Monthly Statistical Report, December, 1986.


Where consumers get tuneups

Source: Champion Spark Plug Co.

1986 Ethylene Glycol-Base Antifreeze Sales

	(Add 000 gal.) Civilian	Government
Packaged ethylene glycol antifreeze sold in quart and gallon sizes	112,152,391	-0-
in drums	9,720,813	(*)
Total	**121,873,204**	**(*)**
Bulk ethylene glycol antifreeze (or ethylene glycol for antifreeze) sold to packagers	55,506,903	1,824,428
Bulk ethylene glycol antifreeze (or ethylene glycol for antifreeze) sold to motor vehicle manufacturers for "drive-away" or factory fill use	13,055,115	-0-
Total	**190,435,222**	**1,824,428**
Grand total (civ. and gov't.)		**192,259,650**

1985 Ethylene Glycol-Base Antifreeze Sales

	(Add 000 gal.) Civilian	Government
Packaged ethylene glycol antifreeze sold in quart and gallon sizes	144,306,517	-0-
in drums	12,682,992	(*)
Total	**156,989,509**	**(*)**
Bulk ethylene glycol antifreeze (or ethylene glycol for antifreeze) sold to packagers	55,284,103	(*)
Bulk ethylene glycol antifreeze (or ethylene glycol for antifreeze) sold to motor vehicle manufacturers for "drive-away" or factory fill use	19,377,529	
Total	**231,651,141**	**1,265,391**
Grand total (civ. and gov't.)		**232,916,532**

(*) Data not shown, except for total, to avoid disclosure of individual company data.
Source: Chemical Specialties Manufacturers Assn.

Good Year for Parts and Services

This should be almost a banner year for the automotive parts and services business, according to "Franchising in the Economy, 1985-1987," a special report of the U.S. Department of Commerce.

Sales and services are expected to generate almost $13-billion in cash flow this year, up 10.6% over 1986. As in the past, retail outlets of tire manufacturers will lead the auto product field with 45% or more of total sales.

Other franchises in the category of auto products and services are the small and specialized car washes, muffler shops, brake parts and diagnostic shops, and lube and oil change shops, all growing in sales. Spurring the growth is the rising demand for service as a result of engineering convenience and additional safety equipment in modern cars, and consumer convenience as well.

Automotive Products/Services (a)

	1987 (b)	1986 (b)	1985
Total number of establishments	40,371	37,407	36,472
Company-owned	5,214	4,830	4,632
Franchise-owned	35,157	32,577	31,840
Total sales of products and services (Add 000) (c)	$12,910,464	11,675,777	10,658,619
Company-owned (c)	4,503,595	3,964,180	3,627,873
Franchise-owned (c)	8,406,869	7,711,597	7,030,746
Average sales per establishment (c)	$320.000	312,000	292,000
Company-owned (c)	864,000	821,000	783,000
Franchise-owned (c)	239,000	237,000	221,000

(a) Includes tire, battery and accessory stores; auto and truck wash services; and brake and muffler repair and services; (b) Data estimated by respondents; (c) Includes sales of non-automotive products such as household appliances, garden supplies, etc.

Source: "Franchising in the Economy, 1985-1987," Bureau of Industrial Economics, U.S. Department of Commerce.

Car Lubrication Service

1987 Crankcase Drain Intervals and Recommended Oil

		Normal Service		Severe Service		
Make	Engine	Miles	Months	Miles	Months	Type Of Oil
American Motors	Alliance, GTA, Jeep	7,500(a)	7.5	—	—	SF
Chrysler Corp.	Turbo	7,500	6	5,000	6	SF-CC SF-CD(b)
	Others	7,500	12	3,000	3	SF SF-CC
Ford Motor Co.	Turbo	5,000	6	3,000	3	SF SF-CC SF-CD
	Others	7,500	6	3,000	3	SF-CC SF-CD
General Motors	Turbo	3,000	3	3,000	3	SF-CC SF-CD
	Others	7,500	12	3,000	3	SF-CD(a)

(a) For Jeep diesel, 5 months or 5,000 miles

(b) preferred

Source: Chek-Chart Publications

1987 Automatic Transmission/Transaxle Drain Intervals and Recommended Fluids

		Normal Service		Severe Service	
Make	Fluid	Months	Miles	Months	Miles
American Motors	Dexron®-II	30	30,000	—	—
Chrysler Corp.	Dexron®-II(b)	—	(a)	—	15,000
Ford Motor Co.	Type H(c)	—	(a)	—	30,000
General Motors	Dexron®-II	—	100,000	—	15,000

(a) Drain not required for normal service.

(b) ATF+ or Type 7176 fluid is preferred in RWD vehicles.

(c) C-3 trans. uses Dexron®-II.

Source: Chek-Chart Publications

1987 Chassis Lubrication Intervals

	Normal Service		Severe Service			
Make	Months	Miles	Months	Miles	Type	Part or Specification No.
American Motors (Jeep only)	7.5	7,500(a)	Shorter - intervals		#2 Lithium EP	8993530
Chrysler Corp.	36	30,000	18	15,000	#2 Barium EP	4318062
Ford Motor Co.	—	30,000	—	15,000	#2 Lithium EP with polyethylene 8-molybdenum disulfide (suspension) #4-5 Lithium (steering)	M1C75-B M1C92-A Type II
General Motors	12	7,500	6	6,000	#1-2 Multipurpose EP	6031-M

(a) For gasoline. Diesel intervals are 5 months or 5,000 miles.

Source: Chek-Chart Publications

Service Job Analysis Update Shows Continued Growth in Auto Service Work

An updated survey for 1986 based on Hunter Publishing Company's 1984 *Service Job Analysis* indicates that U.S. service stations still perform a sizeable share of traditional automotive repair and service jobs.

The update survey, which was conducted using the same Hunter Micromarket Panel which provided data for the 1984 SJA report, shows that service stations are holding their own in terms of traditional service market share. In fact, service stations lead in share of market in 27 out of 53 categories covered in the table.

The table presents data selected from the SJA's major repair/service categories, with emphasis on the type of jobs frequently performed in service stations.

The data is based on a service dealer universe of 329,000 outlets: 115,000 service stations, 150,000 independent repair shops, 25,000 new car/truck dealers and 39,000 fleet service shops. The fleet service segment has been omitted from the table since it relates more to truck repair than automobile service. The SJA does not include figures for discount stores, auto repair chains or other non-traditional repair outlets.

Especially noteworthy in this 1986 SJA survey update is the continued strength shown by service stations in the "growth" areas of the automotive service market—alignment/suspension, carburetors/fuel pumps and air conditioning and cooling system service.

		Service Stations			Independent Repair Shops			New Car/Truck Dealers		
Job	Total Jobs* Performed (Add 000)	Number of Jobs Performed (Add 000)	% of Jobs	% Change from 1985	Number of Jobs Performed (Add 000)	% of Jobs	% Change from 1985	Number of Jobs Performed (Add 000)	% of Jobs	% Change from 1985
LUBRICATION										
Lube Jobs—Car	143,609	68,995	48.0%	(.8)	35,399	24.6%	.1	30,363	21.1%	4.1
Oil Changes—Car	157,509	74,621	47.4	.7	38,346	24.3	2.1	36,699	23.3	5.9
Engine Oil Sold—Quarts	893,889	441,139	49.4	1.9	217,501	24.3	2.3	159,519	17.8	4.7
Oil Filters Replaced—Car	135,422	65,718	48.5	.7	36,244	26.8	2.3	31,647	23.4	6.0
Air Filters Replaced—Car	58,411	25,680	44.0	1.0	20,515	35.1	2.9	11,236	19.2	4.4
CARBURETOR/FUEL PUMP										
Carburetors Installed—New	1,601	543	33.9	1.1	821	51.3	1.1	133	8.3	(1.1)
Carburetor Kits Installed	11,367	3,094	27.2	7.2	6,248	55.0	4.7	1,666	14.7	4.9
Fuel Pumps Installed—New	5,962	2,521	42.3	3.1	2,356	39.5	2.6	760	12.7	4.5
Fuel Filters Replaced—Car	49,441	18,635	37.7	7.4	20,347	41.2	6.7	9,624	19.5	8.4
IGNITION/TUNE-UP										
Engine Tune-Ups—Car	61,085	20,489	33.5	.3	27,042	44.3	.0	12,142	19.9	5.2
Spark Plugs—New	361,344	125,021	34.6	7.2	161,632	44.7	6.4	65,866	18.2	11.3
ELECTRICAL SERVICE										
Batteries Installed	30,304	16,248	53.6	5.8	9,898	32.7	3.9	2,463	8.1	4.3
Battery Cables Installed	16,404	7,318	44.6	1.1	6,699	40.8	.9	1,303	7.9	.9
Alternators Installed—New	2,418	996	41.2	(1.9)	897	37.1	(.3)	370	15.3	1.7
Alternators Inst.—Rebuilt	14,501	7,241	49.9	3.0	5,651	39.0	2.7	930	6.4	3.0
Starters Installed—New	1,792	648	36.2	(.4)	778	43.4	(.9)	271	15.1	.9
Starters Inst.—Rebuilt	12,236	5,975	48.8	3.2	4,856	39.7	2.5	748	6.1	2.7
Voltage Regulators Inst.—New	6,667	2,577	38.7	(1.7)	2,965	44.5	.7	764	11.5	.6
COOLING SYSTEM										
Systems Flushed	14,768	6,704	45.4	2.6	5,560	37.6	4.1	1,970	13.3	6.5
Radiators Replaced—Car	4,992	2,110	42.3	5.3	2,419	48.5	5.8	355	7.1	1.9
Radiator Hose Replaced	28,620	13,666	47.7	4.2	11,451	40.0	5.4	2,496	8.7	5.5
Belts Installed—All Types	60,359	28,054	46.5	6.9	23,299	38.6	8.1	6,602	10.9	8.3
Water Pumps Repl.—New	6,816	2,305	33.8	1.1	3,108	45.6	1.2	1,139	16.7	4.1
Water Pumps Repl.—Rebuilt	6,644	3,103	46.7	.7	2,655	40.0	4.0	633	9.5	2.8
Antifreeze Sold—Gal.	87,728	39,936	45.5	3.3	29,327	33.4	3.9	11,545	13.2	7.2

		Service Stations			Independent Repair Shops			New Car/Truck Dealers		
Job	Total Jobs* Performed (Add 000)	Number of Jobs Performed (Add 000)	% of Jobs	% Change from 1985	Number of Jobs Performed (Add 000)	% of Jobs	% Change from 1985	Number of Jobs Performed (Add 000)	% of Jobs	% Change from 1985
EXHAUST SYSTEM										
Mufflers Replaced—Car	14,585	6,337	43.4%	2.1	5,997	41.1%	1.1	2,024	13.9%	1.0
Tail Pipes Replaced	13,110	5,772	44.0	2.1	5,422	41.4	.5	1,438	11.0	1.3
Exhaust Pipes Replaced	6,736	2,834	42.1	(.3)	2,767	41.1	(.9)	762	11.3	.2
Catalytic Converters Repl.	1,340	269	20.1	6.5	301	22.5	4.9	725	54.1	1.7
TRANSMISSION/CLUTCH										
Standard Trans. Rebuilt	1,270	95	7.5	(1.5)	555	43.7	(.3)	476	37.5	(1.0)
Automatic Trans. Rebuilt	2,830	262	9.3	3.5	1,060	37.5	.9	1,404	49.6	4.3
Auto. Trans. Fluid-Quarts	111,017	45,188	40.7	4.1	39,301	35.4	3.0	21,015	18.9	5.8
Auto. Trans. Filters Repl.	14,878	5,423	36.4	3.8	6,077	40.8	3.2	2,804	18.8	5.3
Universal Joints Repl.—Car	11,738	5,089	43.4	.5	5,524	47.1	.6	890	7.6	(.5)
ALIGNMENT/SUSPENSION										
Wheel Balancing Jobs	32,457	16,828	51.8	4.4	10,590	32.6	8.3	3,511	10.8	8.3
Front-End Alignment	25,712	5,944	23.1	6.7	13,087	50.9	10.2	6,286	24.4	9.6
Shock Absorbers Replaced	25,988	10,291	39.6	(.1)	12,581	48.4	1.3	2,218	8.5	1.0
MacPherson Strut Cartridges Installed	4,639	1,108	23.9	6.8	2,774	59.8	5.4	672	14.5	3.4
BRAKES										
Drum Brake Shoes Installed	26,548	10,516	39.6	3.8	12,326	46.4	2.1	3,287	12.4	2.0
Master Cylinders Replaced—New	4,791	1,580	33.0	3.5	2,654	55.4	4.2	409	8.5	1.3
Brake Drums Replaced	526	131	24.9	.6	274	52.1	.9	75	14.3	.1
Brake Drums Turned/Grnd.	31,607	10,806	34.2	8.2	15,961	50.5	7.3	3,925	12.4	6.6
Disc Brake Pads Installed—Car	36,978	14,368	38.9	8.7	16,838	45.5	6.0	5,307	14.4	7.3
Disc Brake Rotors Resurf.	37,813	12,197	32.3	11.7	20,639	54.6	10.1	4,418	11.7	9.0
CHEMICALS										
Engine Oil Additives	13,413	6,998	52.2	(.2)	3,348	25.0	1.5	2,748	20.5	3.7
Gasoline Additives	18,960	12,113	63.9	4.7	4,652	24.5	3.6	1,789	9.4	15.6
Transmission Additives	4,572	2,038	44.6	.0	1,823	39.9	1.6	664	14.5	2.7
Cooling System Rust Inhibitors	13,413	5,903	44.0	1.3	4,731	35.3	2.8	1,510	11.3	6.2
Refrigerant (Freon) Repl.	59,240	21,801	36.8	5.9	24,948	42.1	4.2	10,499	17.7	6.9
ACCESSORIES/AIR CONDITIONING										
Windshield Wiper Refills	43,811	25,472	58.1	5.8	12,092	27.6	3.0	4,570	10.4	7.7
Air Conditioners Serviced	19,571	8,088	41.3	4.1	6,804	34.8	2.6	4,242	21.7	4.6
Air Conditioner Compressors Installed—New	1,122	274	24.4	1.4	452	40.3	.4	352	31.4	3.1
Air Conditioner Compressors Inst.—Rebuilt	1,399	554	39.6	1.1	590	42.2	(.6)	185	13.2	1.6

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*Segment figures and percentages will not add up to total—remainder is accounted for by self-service fleet locations.

U.S. Refineries and Capacities by States

(Crude Oil Operable Capacity on Jan. 1, 1986)

(* after number indicates capacity shut down but capable of being placed in operation within 90 days.)

Company	b/d
Alabama: Gulf	
Louisiana Land & Exploration Co., Mobile	80,000
Mobile Bay Refining Co., Chickasaw	26,600*
Total	**80,000**
	26,600*
Alabama: Inland	
Hunt Oil Co., Tuscaloosa	33,500
Vulcan Refining Co., Cordova	9,500*
Total	**33,500**
	9,500*
Alaska	
Arco Alaska	
Anchorage	12,000
Prudhoe	22,000
Chevron U.S.A., Kenai	22,000
Mapco Petroleum Co., North Pole	60,000
Tesoro Petroleum Corp., Kenai	72,000
Total	**188,000**
Arkansas	
Berry Petroleum Co. (Formerly Crystal Oil Co.) Stephens	3,200
Cross Oil & Refining Co., Smackover	6,700
Lion Oil Co. (Formerly Tosco Corp.) El Dorado	41,000
	7,000*
MacMillan Petroleum, Inc., Norphlet	5,000
	1,000*
Total	**55,900**
	8,000*
California	
Arco Petroleum Products, Carson	215,000
Beacon Oil Co., Hanford	17,300
Champlin Petroleum Co., Wilmington	63,000
Chevron U.S.A., Bakersfield	26,000
El Segundo	390,000
	15,000*
Richmond	294,000
	71,000*
Conoco, Santa Maria	9,500
Edgington Oil Co., Long Beach	41,600
Exxon Co. U.S.A., Benicia	109,000
Fletcher Oil & Refining Co., Carson	29,500
Gibson Oil & Refining Co., Bakersfield	9,600
Golden West Refining Co., Santa Fe Springs	42,000
Huntway Refining Co.	
Van Nuys	8,000
Wilmington	5,500
Kern Oil & Refinery Co., Bakersfield	21,400
Lunday-Thagard Oil Co., South Gate	8,100
MacMillan Petroleum, Inc., Long Beach	11,000
Mobil Oil Corp., Torrance	123,500
Newhall Refining Co. Inc., Newhall	21,400
Oxnard Refinery, Oxnard	4,000
Pacific Refining Co., Hercules	55,000
Paramount Petroleum Corp.,	
Bakersfield	20,500*
Paramount	32,000
	14,500*
San Joaquin Refining Co., Bakersfield	10,000
	14,300*
Shell Oil Co., Martinez	113,500
Wilmington	93,000
Sunland Refining Corp., Bakersfield	12,000
Texaco Refining & Marketing Co.	
Bakersfield	38,000
Wilmington	75,000
Tosco Corp., Avon	126,000
Unocal Corp.	
Arroyo Grande	41,000
Rodeo	77,000
Wilmington	85,500
West Coast Oil Co., Oildale	19,000*
Witco Chemical Corp., Oildale	0
Total	**2,216,900**
	178,800*
Colorado	
Asamera Oil (U.S.), Commerce City	26,000
Conoco, Commerce City	41,500
Delaware	
Texaco Refining & Marketing Co. Delaware City	140,000
Florida	
Seminole Refining Corp. St. Marks	10,000
	7,000*
Georgia	
Amoco Oil Co., Savannah	28,000
Young Refining Corp., Douglasville	6,000
Total	**34,000**
Hawaii	
Chevron U.S.A., Honolulu	48,000
Illinois	
Clark Oil & Refining Corp.,	
Blue Island	57,000
Hartford	47,500
Marathon Petroleum Co., Robinson	120,000
	75,000*
Mobil Oil Corp., Joliet	180,000
Motor Oils Refining Co., McCook	1,000
Shell Oil Co., Wood River	264,000
Unocal Corp. Lomont	151,000
Total	**821,000**
	75,000*
Indiana	
Amoco Oil Co., Whiting	350,000
Gladieux Refinery, Fort Wayne	19,000*
Indiana Farm Bureau Cooperative Assn., Mount Vernon	21,200
Kentucky Oil & Refining Co., Troy	3,000
Laketon Refining Corp., Laketon	8,719
Rock Island Refining Corp., Indianapolis	43,200
Total	**426,119**
	19,000*
Kansas	
Derby Refining Co., Wichita	28,800
Farmland Industries, Coffeyville	56,500
Phillipsburg	26,400
National Cooperative Refinery Assn., McPherson	70,100
Pester Refining Co., El Dorado	32,000*
Texaco Refining & Marketing Co. El Dorado	80,169
Total Petroleum, Arkansas City	50,000
Total	**311,969**
	32,000*
Kentucky	
Ashland Oil, Catlettsburg	213,400
Kentucky Oil & Refining Co., Betsy Lane	600*
Somerset Refinery Inc., Somerset	5,500
Total	**218,000**
	600*
Louisiana: Gulf	
Calcasieu Refining Co., Lake Charles	14,000
Canal Refining Co., Church Point	8,000
Citgo Petroleum Corp., Lake Charles	297,000
	23,000*
Clark Oil & Refining Corp., Mt. Airy	0
Conoco, Egan	10,000
West Lake	156,500
Exxon Co. U.S.A., Baton Rouge	455,000
Hill Petroleum Co., Krotz Springs	55,300
Marathon Petroleum Co., Garyville	255,000
Murphy Oil U.S.A., Meraux	78,500
	14,000*
Placid Refining Co., Port Allen	45,000
Shell Oil Co., Norco	218,200
Standard Oil Co. (Formerly Gulf Refining & Marketing Co.) Belle Chasse	198,500
Tenneco Oil Co., Chalmette	137,000
Texaco Refining & Marketing Co., Convent	225,000
Texas NAPCO, St. James	20,000*
Total	**2,152,800**
	57,000*
Louisiana: Inland	
Calumet Refining Co., Princeton	3,162
Claiborne Gasoline Co., Lisbon	6,500
Kerr-McGee Corp., Cotton Valley	7,800
Dubach	10,000
Pennzoil Oil Shreveport	46,200
Total	**73,662**

Company	b/d
Maryland	
Chevron U.S.A., Baltimore	14,200*
Total	**14,200***
Michigan	
Crystal Refining Co., Carson City	3,000
Lakeside Refining Co., Kalamazoo	5,000*
Marathon Petroleum Co., Detroit	68,500
Total Petroleum, Alma	40,000
Total	**111,500**
	5,000*
Minnesota	
Ashland Oil, St. Paul Park	67,143
Koch Refining Co., Rosemount	155,000
Total	**222,143**
Mississippi: Gulf	
Chevron U.S.A., Pascagoula	295,000
Mississippi: Inland	
Amerada Hess Corp., Purvis	31,000
Ergon Refining, Vicksburg	20,600
Southland Oil Co., Lumberton	5,800
Sandersville	11,000
Total	**68,400**
Montana	
Cenex, Laurel	33,650
	7,800*
Conoco, Billings	48,500
Exxon Co. U.S.A., Billings	42,000
Flying J, Cut Bank	5,600*
Montana Refining Co., Great Falls	6,300
Total	**130,450**
	13,400*
Nevada	
Nevada Refining Co., Tonopah	4,500
New Jersey	
Amerada Hess Corp., Port Reading	0
Chevron U.S.A., Perth Amboy	80,000*
Coastal Eagle Point Oil Co. (Formerly Texaco Refining & Marketing) Westville	90,000
Exxon Co. U.S.A., Linden	100,000
Mobil Oil Corp., Paulsboro	100,000
Seaview Petroleum Co., Paulsboro	44,400*
Total	**290,000**
	124,400*
New Mexico	
Bloomfield Refining Co., Bloomfield	13,700
Giant Refining Co., Gallop	18,000
Navajo Refining Co., Artesia	34,700
Thriftway Oil Co., Bloomfield	6,100
Total	**72,500**
New York: East	
Cibro Petroleum Products, Albany	41,850*
North Carolina	
GNC Energy Corp., Greensboro	3,000*
North Dakota	
Amoco Oil Co., Mandan	58,000
Flying J, Williston	4,583*
Total	**58,000**
	4,583*
Ohio: East	
Ashland Oil, Canton	66,000
Ohio: West	
Chevron U.S.A. (Formerly Gulf Refining & Marketing Co.) Cincinnati	43,700
Standard Oil Co.	
Lima	168,000
Toledo	125,000
Sun Co., Toledo	118,000
Total	**454,700**
Oklahoma	
Barrett Refining Corp., Thomas	9,300
Conoco, Ponca City	134,000
Kerr-McGee Corp., Wynnewood	43,000
Sinclair Oil Corp., Tulsa	50,000
Sun Co., Tulsa	85,000
Total Petroleum, Ardmore	62,000
Total	**383,300**
Oregon	
Chevron U.S.A., Willbridge	15,000
Pennsylvania: East	
Atlantic Refining & Marketing Co. (Formerly Atlantic Richfield Co.) Philadelphia	125,000
BP Oil Corp., Marcus Hook	173,000
Chevron U.S.A. (Formerly Gulf Refining & Marketing Co.) Philadelphia	174,100
Sun Co., Marcus Hook	155,000
Total	**627,100**
Pennsylvania: West	
Pennzoil Co., Rouseville	15,700
Quaker State Oil Refining Corp., Smethport	6,700
United Refinery Co., Warren	60,000
Witco Corp., Bradford	8,500
Total	**90,900**
Tennessee	
Mapco Petroleum Co., Memphis	60,000
Texas: Gulf	
Amoco Oil Co., Texas City	415,000
Champlin Petroleum Co., Corpus Christi	157,000
Charter International Oil Co., Houston	65,000*
Chevron U.S.A. (Formerly Gulf Refining & Marketing Co.) Port Arthur	406,900
Coastal Refining & Marketing Co. Corpus Christi	87,500
Crown Central Petroleum Corp., Pasadena	100,000
Exxon Co. U.S.A., Baytown	494,000
Fina Oil & Chemical Co. (Formerly American Petrofina Co. of Texas) Port Arthur	90,000
Koch Refining Co., Corpus Christi	125,000
Lyondell Petrochemical Co. (Formerly Atlantic Richfield Co.) Houston	206,000
Marathon Petroleum Co., Texas City	49,000
	20,500*
Mobil Oil Corp., Beaumont	275,000
Petromax, Houston	2,000*
Phillips 66 Co. Sweeney	175,000
Shell Oil Co., Deer Park	228,500
South Hampton Refining Co., Silsbee	20,250*
Southwestern Refining Co., Corpus Christi	104,000
Texaco Refining & Marketing Co.,	
Port Arthur	220,000
Port Neches	31,000*
Texas City Refining, Texas City	119,600
Trifinery Corpus Christi	30,000*
Unocal Corp., Beaumont (Nederland)	120,000
Valero Refining Co. (Formerly Saber Refining Co.) Corpus Christi	18,000*
Total	**3,426,500**
	185,750*
Texas: Inland	
Amber Refining, Fort Worth	12,500
	7,200*
Chevron U.S.A., El Paso	76,000
Diamond Shamrock Refining & Marketing Co.,	
Sunray	85,000
Three Rivers	47,000
Fina Oil & Chemical Co. (Formerly American Petrofina Co. of Texas) Big Spring	60,000
Howell Hydrocarbons Corp., San Antonio	9,900
La Gloria Oil & Gas Co., Tyler	46,000
Leal Energy Corp., Nixon	9,589
Liquid Energy Corp., Bridgeport	10,000
Petrolite Corp., Kilgore	1,000
Phillips 66 Co., Borger	100,000
Pride Refining Inc., Abilene	42,750
Shell Oil Co., Odessa	30,600
Texaco Refining & Marketing Co., El Paso	17,000
Total	**547,339**
	14,008*
Utah	
Amoco Oil Co., Salt Lake City	40,000
Big West Oil Co. (Formerly RMT Properties) Salt Lake	24,000
Chevron U.S.A., Salt Lake City	45,000
Crysen Corp., Woods Cross	12,500
Phillips 66 Co., Woods Cross	25,000
Seagull Refining Co., Roosevelt	8,000
Total	**154,500**
Virginia	
Amoco Oil Co., Yorktown	51,000
Primary Oil & Energy Co., Chester	1,900
Virginia Oil & Refining Co., Jonesville	1,000
Total	**53,900**
Washington	
Arco Petroleum Products Co., Ferndale	146,000
Chevron U.S.A., Richmond Beach	5,500
Mobil Oil Corp., Ferndale	77,000
Shell Oil Co., Anacortes	72,000
Sound Refining (Formerly Crysen Corp.) Tacoma	11,900
Texaco Refining & Marketing Co., Anacortes	78,000
U.S. Oil & Refining Co., Tacoma	29,500
Total	**419,900**

Company	b/d
West Virginia	
Quaker State Oil Refining Corp.,	
Newell	12,150
St. Mary's	4,520
Total	**16,670**
Wisconsin	
Murphy Oil Corp., Superior	32,000
Wyoming	
Amoco Oil Co., Casper	40,000
Frontier Refining Co. (Formerly RMT Properties) Cheyenne	28,800
Little America Refining Co., Casper	24,500
Mountaineer Refining Co., La Barge	100 250*
Silver Eagle Oil Co., La Barge	2,500*
Sinclair Oil Corp., Sinclair	54,000
Wyoming Refining Co., Newcastle	12,555
Total	**159,955** **2,750***
Guam	
Guam Oil & Refining Co., Agana	43,900*
Puerto Rico	
Chevron U.S.A. (Formerly Gulf Refining & Marketing Co.) Bayamon	38,000
Phillips Puerto Rico Core, Guayama	0
Sun Co., Yabucoa	85,000
Total	**123,000**
Hawaiian Foreign Trade Zone	
Hawaiian Independent Refinery, Ewa Beach	67,900
Virgin Islands	
Amerada Hess Corp., St. Croix	470,000 75,000*

Source: Petroleum Supply Annual, 1985, Energy Information Administration, June, 1986.

Lubricating Oil and Wax Capacities of U.S. Refineries

(All capacities in 000 b/d) as of Jan. 1, 1987

			Finished Lube Capacity					Wax Capacity	
Company	**Location**	**Crude Capacity**	**A**	**B**	**C**	**D**	**Total**	**E**	**F**
Amoco Oil Co.	Caspar, Wyo.	40.0	1.5	0.1			1.6		0.5
Amoco Oil Co.	Whiting, Ind.	350.0	6.2				6.2	0.6	
Ashland Oil, Inc.	Catlettsburg, Ky.	213.4	7.5				7.5		2.0
Calumet Refining Co.	Burnham, Ill.					0.6	0.6		
Calumet Refining Co.	Princeton, La.	4.4				3.2	3.2		
Chevron U.S.A. Inc.	Port Arthur, Tex.	406.9	6.1	0.5	2.0	0.1	8.7		0.3
Chevron U.S.A. Inc.	Richmond, Calif.	350.0			2.3		2.3	1.2	1.0
Cit-Con Oil Corp.	Lake Charles, La.		9.1				9.1	1.0	0.8
Conoco Inc.	Ponca City, Okla.	134.0	2.0				2.0	0.2	
Cross Oil & Refining	Smackover, Ark.	7.0				4.0	4.0		
Diamond Shamrock	Three Rivers, Tex.	2.0							
Exxon Co., U.S.A.	Baton Rouge, La.	455.0	16.0	0.5			16.5	1.5	
Exxon Co., U.S.A.	Baytown, Tex.	494.0	19.8		9.0		28.8		1.8
Farmland Industries, Inc.	Coffeyville, Kans.	56.5	2.5				2.5		0.2
Lubricating Co. of America	Saugus, Calif.				0.5		0.5		
Lyondell Petrochemical Co.	Houston, Tex.	260.0	3.8				3.8		0.4
Macmillan Petroleum Inc.	Norphlet, Ark.	6.0				2.2	2.2		
Mobil Oil Corp.	Beaumont, Tex.	270.0	7.5				7.5	1.3	0.3
Mobil Oil Corp.	Paulsboro, N.J.	100.0	7.0				7.0		
Pennzoil Co.	Rouseville, Pa.	15.7						0.6	0.4
Pennzoil Co./Atlas Processing Co.	Shreveport, La.	46.2	3.6				3.6	1.0	
Petrolite Corp.	Barnsdall, Okla.							0.4	
Petrolite Corp., Bareco Div.	Kilgore, Tex.	1.0							0.3
Quaker State Oil Ref. Corp.	Emlenton, Pa.							0.7	
Quaker State Oil Ref. Corp.	Farmers Valley, Pa.	6.5	1.7				1.7	0.4	0.5
Quaker State Oil Ref. Corp.	Newell, W.V.	11.7							0.8
Quaker State Oil Ref. Corp.	St. Mary's, W.V.	4.9	1.0	0.6			1.6		0.3
Seaview Petroleum Co.	Paulsboro, N.J.	33.0				5.0	5.0		
Shell Oil Co.	Deer Park, Tex.	214.0	4.6				4.6	1.2	
Shell Oil Co.	Martinez, Calif.	135.2			3.8		3.8		
Shell Oil Co.	Wood River, Ill.	274.0							
Standard Oil Co.	Lima, Ohio	178.0	2.4				2.4		0.8
Sun Company, Inc.	Marcus Hook, Pa.	155.0				4.0	4.0		
Sun Company, Inc.	Tulsa, Okla.	85.0	7.5				7.5	0.8	
Sun Company, Inc.	Yabucoa, Puerto Rico	85.0							1.7
Texaco U.S.A.	Port Arthur, Tex.	250.0	15.0	0.1	1.0		16.1		1.8
Unocal	Nederland, Tex.	120.0	3.1				3.1	0.1	0.2
Unocal	Rodeo, Calif.	77.0	5.1				5.1	0.8	1.2
Witco Chemical Corp.	Bradford, Pa.	10.0	1.6	0.9			2.5	0.2	
Witco Chemical Corp.	Oildale, Calif.	11.0			2.7	1.0	3.7		
	TOTAL:	**4862.4**	**134.6**	**2.6**	**21.3**	**20.1**	**176.6**	**12.0**	**15.3**

Canadian Refineries

Esso Petroleum Canada	Sarnia, Ontario	126.0	4.6		0.7		5.3	0.5	1.8
Esso Petroleum Canada	Strathcona, Alberta	157.0					2.7		0.6
International Waxes, Ltd.	Agincourt, Ontario							0.8	
Petro-Canada Products	Clarkson, Ontario	60.0					4.6		1.0
Shell Canada, Ltd.	Montreal East, Quebec	31.0	3.4				3.4		1.0
	TOTAL:	**374.0**	**8.0**		**0.7**		**16.0**	**1.3**	**4.4**

Definitions: A-Solvent extracted paraffinic lubes; B-Unextracted paraffinic lubes; C-Solvent extracted naphthanic lubes; D-Unextracted unhydrotreated naphthanic lubes; E-Fully refinished, crude scale and microcrystalline waxes; F-Semi-finished, slack waxes and petrolatums.

Source: National Petroleum Refiners Assn., Lubricating Oil and Wax Capacities, 1986

U.S. Refineries and Capacities by Companies

(In descending order as of Jan. 1, 1986)

Important note: This listing includes capacity that is operational and capacity that is idle or shut down. In the latter case, this capacity can be restored to normal within 90 days. The Energy Information Administration says there were 216 operable refineries on Jan. 1, 1986, compared with a total of 223 the preceding year. The crude distillation capacity was 15.5 million b/d, compared with the year ago figure of 15.7 million b/d. For earlier data, see 1986 *NPN Factbook*.

Companies with a capacity of more than 100,000 b/d. Number of companies: 30; Total capacity: 13,355,412 b/d.

Company	b/d
Chevron Corp.	
Chevron U.S.A.	
Port Arthur, TX[1]	406,900
El Segundo, CA	405,000
Richmond, CA	365,000
Pascagoula, MS	295,000
Philadelphia, PA[1]	174,100
Perth Amboy, NJ	80,000
El Paso, TX	76,000
Honolulu, HI	48,000
Salt Lake City, UT	45,000
Cincinnati, OH[1]	47,300
Bakersfield, CA	26,000
Kenai, AK	22,000
Willbridge, OR	15,000
Baltimore, MD	14,200
Richmond Beach, WA	5,500
Total	2,021,400
Exxon Corp.	
Exxon Co. U.S.A.	
Baytown, TX	494,000
Baton Rouge, LA	455,000
Benicia, CA	109,000
Linden, NJ	100,000
Billings, MT	42,000
Total	1,200,000
Shell Oil Co.	
Wood River, IL	264,000
Deer Park, TX	228,500
Norco, LA	218,000
Martinez, CA	113,500
Wilmington, CA	93,000
Anacortes, WA	72,000
Odessa, TX	30,600
Total	1,019,600
Amoco Corp.[2]	
Amoco Oil Co.	
Texas City, TX	415,000
Whiting, IN	350,000
Mandan, ND	58,000
Yorktown, VA	51,000
Casper, WY	40,000
Salt Lake City, UT	40,000
Savannah, GA	28,000
Total	982,000
Texaco Inc.	
Texaco Refining & Marketing	
Convent, LA	225,000
Port Arthur, TX	220,000
Delaware City, DE	140,000
El Dorado, KS	80,169
Anacortes, WA	78,000
Wilmington, CA	75,000
Bakersfield, CA	38,000
Port Neches, TX	30,000
El Paso, TX	17,000
Total	903,169
Mobil Oil Corp.	
Beaumont, TX	275,000
Joliet, IL	180,000
Torrance, CA	123,000
Paulsboro, NJ	100,000
Ferndale, WA	77,000
Total	755,000
Standard Oil Co.[3]	
Belle Chasse, LA[1]	198,500
Lima, OH	168,000
Toledo, OH	125,000
BP Oil Corp.	
Marcus Hook, PA	173,000
Total	664,500
Atlantic Richfield Co.	
Houston, TX	260,000
Carson (Watson), CA	215,000
Ferndale (Cherry Point), WA	146,000
Prudhoe, AK[3]	22,000
Anchorage, AK[3]	12,000
Total	665,000
U.S. Steel Corp.	
Marathon Petroleum Co.	
Garyville, LA	255,000
Robinson, IL	195,000
Texas City, TX	69,500
Detroit, MI	68,500
Total	588,000
Unocal Corp.	
Lemont (Chicago), IL	151,000
Beaumont (Nederland), TX	120,000
Wilmington, CA	108,000
Rodeo (San Francisco), CA	77,000
Arroyo Grande, CA	41,000
Total	497,000
E.I. Du Pont De Nemours & Co.	
Conoco, Inc.	
West Lake (Lake Charles), LA	156,500
Ponca City, OK	134,000
Billings, MT	48,500
Denver (Commerce City), CO	41,500
Egan (Acadia), LA	10,000
Santa Maria, CA	9,500
Total	400,000
Sun Co. Inc.	
Marcus Hook, PA	155,000
Toledo, OH	118,000
Tulsa, OK	85,000
Total	358,000
Ashland Oil Inc.	
Catlettsburg, KY	213,400
St. Paul Park, MN	67,143
Canton, OH	66,000
Total	346,543
Southland Corp.	
Citgo Petroleum Corp.	
Lake Charles, LA	320,000
Phillips Petroleum Co.	
Phillips 66 Co.	
Sweeny, TX	175,000
Borger, TX	100,000
Woods Cross, UT	25,000
Total	300,000
Koch Industries	
Koch Refining Co.	
Rosemount, MN	155,000
Corpus Christi, TX	125,000
Total	280,000
The Coastal Corp.	
Coastal Eagle Point Oil Co.[4]	
Westville, NJ	90,000
Coastal Refining & Marketing[5]	
Corpus Christi, TX	87,500
Pacific Refining Co.	
Hercules, CA	55,000
Derby Refining Co.	
Wichita, KS	28,800
Total	261,300
Union Pacific Corp.	
Champlin Petroleum Co.	
Corpus Christi, TX	157,000
Wilmington, CA	63,000
Total	220,000
Kerr-McGee Corp.	
Kerr-McGee Refining Corp.	
Wynnewood, OK	43,000
Dubach, LA	10,000
Cotton Valley, LA	7,800
Southwestern Refining Co.	
Corpus Christi, TX	104,000
Total	164,800
Total Petroleum North America Ltd.	
Total Petroleum Inc.	
Ardmore, OK	62,000
Arkansas City, KS	50,000
Alma, MI	40,000
Total	152,000
American Petrofina, Inc.	
Fina Oil & Chemical Co.[6]	
Port Arthur, TX	90,000
Big Spring, TX	60,000
Total	150,000
Tenneco Oil Co.	
Chalmette, LA	137,000
Diamond Shamrock Corp.	
Diamond Shamrock Refining & Marketing Co.	
Sunray, TX	85,000
Three Rivers, TX	47,000
Total	132,000
Sinclair Marketing[7]	
Sinclair Oil Corp.	
Sinclair, WY	54,000
Tulsa, OK	50,000
Little America Refining Co.	
Casper, WY	24,500
Total	128,500
Tosco Corp.	
Martinez, CA	126,000
Atlantic Petroleum Corp	
Atlantic Refining & Marketing Corp.	
Philadelphia, PA	125,000
Murphy Oil U.S.A.	
Meraux, LA	92,500
Superior, WI	32,000
Total	124,500
Mapco, Inc.[8]	
Mapco Petroleum Co.	

Company	b/d
Memphis, TN	60,000
North Pole, AK	60,000
Total	120,000
Agway Petroleum Corp.	
Texas City Refining	
Texas City, TX	119,600
Apex Oil Co.	
Clark Oil & Refining Corp.	
Blue Island, IL	57,000
Hartford (Wood River), IL	47,500
Total	104,500

Companies with capacity of 30,001 to 100,000 b/d. Number of companies: 25; Total capacity: 1,325,333 b/d.

Company	b/d
Crown Central Petroleum Corp.	
Pasadena, TX	100,000
Farmland Industries Inc.	
Coffeyville, KS	56,500
Phillipsburg, KS	26,400
Total	82,900
Louisiana Land & Exploration Co.	
Mobile, AL	80,000
Tesoro Petroleum Corp.	
Kenai, AK	72,000
National Cooperative Refinery Assn.	
McPherson, KS	70,100
United Refining Co.	
Warren, PA	60,000
Vulcan Refining Co.	
Cordeva, AL	9,500
Total	69,500
Paramount Petroleum Corp.	
Paramount, CA[10]	46,500
Bakersfield, CA[11]	20,500
Total	67,000
Charter International Oil Co.	
Houston, TX	65,000
Pennzoil Co.	
Pennzoil Products Co.[9]	
Shreveport, LA	46,200
Rouseville, PA	15,700
Total	61,900
Philbro Distributing Corp.[10]	
Hill Petroleum Co.	
Krotz Springs, LA	55,300
Lion Oil Co.[11]	
El Dorado, AR	48,000
Texas Eastern Corp.	
La Gloria Oil & Gas Co.	
Tyler, TX	46,000
Placid Oil Co.	
Placid Refining Co.	
Port Allen, LA	45,000
Seaview Petroleum Co.	
Paulsboro, NJ	44,400
Rock Island Refining Corp.	
Indianapolis, IN	43,200
Soberbio	
Pride Refining Inc.	
Abilene, TX	42,750
Thrifty Oil Co.	
Golden West Refining Co.	
Santa Fe Springs, CA	42,000
Cirillo Brothers Oil Co.	
Cibro Petroleum Products, Inc.	
Albany, NY	41,850
Triad Terminal Corp.	
Edgington Oil Co.	
Long Beach, CA	41,600
Cenex	
Laurel, MT	41,450
Holly Corp.	
Navado Refining Co.	
Artesia, NM	34,700
Flying J Petroleum	
Cut Bank, MT	5,600
Williston, ND	4,583
Big West Oil Co.	
Salt Lake, UT[13]	24,000
Total	34,183
Hunt Oil Co.	
Tuscaloosa, AL	33,500
Pester Refining Co.	
El Dorado, KS	32,000
Amerada Hess Corp.	
Purvis, MI	31,000

Companies with capacity 10,001 to 30,000 b/d. Number of companies: 30; Total capacity: 617,272 b/d.

Company	b/d
Trifinery[14]	
Corpus Christi, TX	30,000
Fletcher Oil & Refining Co.	
Carson, CA	29,500
Time Oil Co.	
U.S. Oil & Refining Co.	
Tacoma, WA	29,500
Frontier Refining Co.[13]	
Cheyenne, WY	28,800
Mobile Bay Refining Co.	
Chickasaw, AL	26,600
Asamera Oil (U.S.)	
Commerce City (Denver), CO	26,000
Crysen Corp.	
Woods Cross, UT	12,500
Tacoma, WA	11,900
Total	24,400
San Joaquin Refining Co.	
Bakersfield, CA	24,300
Quaker State Oil Refining Corp.	
Newell, WVA	12,150
Bradford, PA	6,700
St. Mary's, WVA	4,520
Total	23,370
Young Refining Corp.	
Douglasville, GA	6,000
Seminole Refining Corp.	
St. Marks, FL	17,000
Total	23,000
Kern Oil & Refinery Co.	
Bakersfield, CA	21,400
Pauley Petroleum	
Newhall Refining Co.	
Newhall, CA	21,400
Indiana Farm Bureau Cooperative	
Mount Vernon, IN	21,200
Ergon Inc.	
Vicksburg, MS	20,600
South Hampton Refining Co.	
Silsbee, TX	20,250
Texas Napco Inc.	
St. James, LA	20,000
E-Z Serv Inc.	
Amber Refining Co.	
Fort Worth, TX	19,700
Gladieux Refinery	
Fort Wayne, IN	19,000
West Coast Oil Co.	
Oildale, CA*	19,000
Valero Energy Corp.	
Valero Refining Co.[15]	
Corpus Christi, TX	18,000
Giant Industries Inc.	
Giant Refining Co.	
Gallup (Ciniza), NM	18,000
American Ultramar Ltd.	
Beacon Oil Co.	
Hanford, CA	17,300
MacMillan Ring-Free Oil Co.	
MacMillan Petroleum Inc.	
Long Beach, CA	11,000
Norphlet, AK	6,000
Total	17,000
VSG Corp.	
Southland Oil Co.	
Sandersville, MS	11,000
Lumberton, MS	5,800
Total	16,800
Leal Petroleum Corp.	
Lake Charles, LA	14,000
Calcasieu Refining Co.	
Lake Charles, LA	14,000
Gary Energy Corp.	
Bloomfield Refining Co.	
Bloomfield, NM	13,700
Huntway Refining Co.	
Benicia, CA	8,000
Wilmington, CA	5,500
Total	13,500
Wyoming Refining Co.	
Newcastle, WY	12,555
World Oil Co.	
Sunland Refining Co.	
Bakersfield, CA	12,000

Companies with capacity 10,000 b/d or less. Number of companies: 29; Total capacity: 160,931 b/d.

Company	b/d
Saber Refining	
Bakersfield, CA	10,000
Mitchell Energy and Development Corp.	
Liquid Energy Corp.	
Bridgeport, TX	10,000
Howell Corp.	
Howell Hydrocarbons Corp.	
San Antonio, TX	9,900
Gibson Oil & Refining Co.	

Company	b/d
Bakersfield, CA	9,600
Barrett Refining Corp.[17]	
Thomas, OK	9,300
Laketon Refining Corp.	
Laketon, IN	8,719
Witco Corp.[18]	
Bradford, PA	8,500
Thagard Oil Co.	
South Gate, CA	8,100
Anchor Gasoline Corp.	
Canal Refining Co.	
Church Point, LA	8,000
Linmar Ventures/Theo Davies	
Seagull Refining Co.	
Roosevelt, UT	8,000
Lakeside Refining Co.	
Kalamazoo, MI	5,000
Crystal Refining Co.	
Carson City, MI	3,000
Total	8,000
Moore & Munger	
Cross Oil & Refining Co	
Smackover, AR	6,700
Claiborne Gasoline Co.	
Lisbon, LA	6,500
Montana Refining Co.	
Great Falls, MT	6,300
Thriftway Co.	
Bloomfield, NM	6,100
Somerset Refinery	
Somerset, KY	5,500
Nevada Refining Co.	
Tonopah, NV	4,500
Oxnard Refinery	
Oxnard, CA	4,000
Kentucky Oil & Refining Co.	
Troy, IN	3,000
Betsy Lane, KY	600
Total	3,600
Martin Gas Sales	
Berry Petroleum Co.[19]	
Stephens, AR	3,200
Calumet Industries	
Calumet Refining Co.	
Princeton, LA	3,162
GNC Energy Corp.	
Greensboro, NC	3,000
Silver Eagle Oil Co.	
La Barge, WY	2,500
Petromax Refining Co.	
Houston, TX	2,000
Primary Oil & Energy Co.	
Chester, VA	1,900
Motor Oils Refining Co.	
McCook, IL	1,500
Petrolite Corp.	
Kilgore, TX	1,000
Virginia Oil & Refining Co.	
Jonesville, VA	1,000
Mountaineer Refining Co.	
La Barge, WY	350

Footnotes

Refineries by declining numbers

[1] Formerly Gulf Refining & Marketing Co.
[2] Formerly Standard Oil Co. of Indiana
[3] Formerly Standard Oil Co. of Ohio
[4] Formerly Texaco Refining & Marketing Co.
[5] Formerly Coastal States Petroleum Corp.
[6] Formerly American Petrofina Co. of Texas
[7] Formerly Earl Holding Co.
[8] Formerly Mid-America Pipeline System
[9] Formerly Pennzoil Co.
[10] Formerly Goldking Refining Ltd.
[11] Formerly Tosco Corp.
[12] Formerly Pride Refining Co.
[13] Formerly RMT Properties
[14] Formerly Sentry Refining
[15] Formerly Saber Refining Co.
[16] Formerly Pioneer Refining Ltd.
[17] Formerly Oklahoma Refining Co.
[18] Formerly Witco Chemical Corp.
[19] Formerly Crystal Oil Co.

Source: Energy Information Administration, Petroleum Supply Annual, Volume 1, May 1986.

HANNA CAR WASH ALTERNATIVES
Increase Profits
HANNA ROBOT WASH
CAR WASH
CONVEYORIZED SYSTEM
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Changes in U.S. Refinery Capacity in 1985

On Jan. 1, 1986, the U.S. had a total of 216 operable refineries. There were 15 shutdowns in 1985 and 10 start-ups reflecting new or reactivated units for a net loss of five refineries during the year. Operable capacity was rated at 15.5 million b/d, virtually unchanged from the year-ago level. It would appear that the sharp declines of recent years are bottoming out and the industry is re-stabilizing itself. Since Jan. 1, 1981, crude oil distillation capacity has declined 3 million b/d while the refinery population has fallen from 324 units in 1981 to 216 at the beginning of 1986.

Refinery Closings in 1985

Refinery	Location	Crude Distillation Capacity b/cd	Total Downstream Capacity b/sd	Years in Operation
Allied Materials Corp.	Stroud, Okla.	7,600	2,500	37+
American Refining Group	Indianola, Pa.	180	0	3
Ashland Oil	Freedom, Pa.	6,800	3,600	37+
B-T Energy Corp.	Louisville, Ky.	3,000	0	3
Conoco	Alvin, Texas	33,274	0	22
Coastal Petroleum Refiners	Bakersfield, Calif.	10,000	0	6
Damson Gas Processing Corp.	White Deer, Texas	0	1,000	12
Flint Chemical Co.	San Antonio, Texas	1,500	0	23
Golden Eagle Refining Co.	Carson, Calif.	16,170	0	37+
International Processors	St. Rose, La.	28,356	14,000	6
Kenco Refining	Wolf Point, Mont.	4,700	0	8
Morrison Petroleum Co.	Woods Cross, Utah	6,000	0	11
Texaco Refining & Marketing	Amarillo, Texas	20,000	24,400	37+
Texaco Refining & Marketing	Lawrenceville, Ill.	79,000	134,000	37+
Tropicana Energy Co.	Fort Worth, Texas	4,650	0	19
Vicksburg Refining	Vicksburg, Miss.	6,000	0	7
U.S. Total		242,430	206,600	—

New and Reactivated Refineries in 1985

				Status
Arco Alaska	Anchorage, Alas.	12,000	0	N
Barrett Refinery Corp.	Thomas, Okla.	9,300	0	R
Hill Petroleum Co.	Krotz Springs, La.	55,300	77,000	R
Leal Petroleum Corp.	Nixon, Texas	9,589 6,808*		R
Primary Oil & Energy Corp.	Chester, Va.	1,900	0	N
Saber Refining Co.	Bakersfield, Calif.	10,000	0	R
Seminole Refining Corp.	St. Marks, Fla.	10,000 7,000*	11,390	R
Silver Eagle Oil Co.	La Barge, Wyo.	2,500*	1,300	R
South Hampton Refining Co.	Silsbee, Texas	10,000	0	R
Trifinery	Corpus Christi, Texas	30,000	25,000	R
U.S. Total		130,089	120,390 36,558*	

*Idle capacity; b/cd: bbls. per calendar day; b/sd: bbls. per stream day.

Source: Energy Information Administration, Petroleum Supply Annual 1985, Vol. 1 published May 1986.

U.S. Refinery Closings—1981 through 1985

PAD District/Refinery	Location	Crude Distillation Capacity (B/CD)	Total Downstream Capacity (B/SD)	Date of Last Operation	Date Shutdown	Years in Operation
District 1						
American Refinery Group	Indianola, Pa.	180	0	3/84	12/85	3
Amoco Oil Co.	Baltimore, Md.	15,000	0	1/82	3/82	25+
Ashland Oil, Inc.	Buffalo, N.Y.	64,000	106,500	7/82	12/84	36+
Ashland Oil, Inc.	Freedom, Pa.	6,800	3,600	4/85	12/85	37+
ATC Petroleum Inc.	Wilmington, N.C.	11,900	0	7/81	1/82	8
ATC Petroleum Inc.	Newington, N.H.	13,400	0	7/81	1/82	7
ELK Refining Co., div. of Pennzoil Co. Inc.	Falling Rock, W.Va.	5,600	2,000	12/82	1/83	25+
Manatee Energy Co.	Port Manatee, Fla.	28,400	0	5/81	10/81	2
Mobil Oil Corp.	Buffalo, N.Y.	43,000	67,000	5/81	7/81	25+
Quaker State Oil Refining Corp.	Emlenton, Pa.	0	2,980	12/83	12/83	25+
Total		**188,280**	**182,080**	—	—	—
District 2						
Allied Materials Corp.	Stroud, Okla.	7,600	2,500	12/84	2/85	37+
Amoco Oil Co.	Sugar Creek, Mo.	104,000	185,500	5/82	6/82	25+
Amoco Oil Co.	Wood River, Ill.	104,000	127,000	5/81	10/81	25+
Ashland Oil, Inc.	Findlay, Ohio	20,400	8,000	2/82	12/84	36+
Ashland Oil, Inc.	Louisville, Ky.	25,200	29,000	4/82	12/84	36+
B-T Energy Corp.	Louisville, Ky.	3,000	0	11/84	11/85	3
Champlin Petroleum Co.	Enid, Okla.	53,800	58,500	6/83	12/83	25+
Conoco Inc.	Wrenshall, Minn.	23,500	25,700	5/81	9/81	5
CRA, Inc.	Scottsbluff, Neb.	5,600	3,650	5/82	6/82	25+
Dillman Oil Recovery Inc.	Oblong, Ill.	1,200	0	1/81	2/82	4
Dow Chemical U.S.A.	Bay City, Mich.	20,000	0	5/80	9/81	25+
E-Z Serv Refining Inc.	Shallow Water, Kan.	9,500	0	4/81	2/82	25+
Energy Cooperative Inc.	East Chicago, Ind.	126,000	190,000	5/81	6/82	25+
Energy Development	Crossville, Ill.	1,000	0	2/81	4/81	22
Gulf Oil Corp.	Toledo, Ohio	50,300	61,800	6/81	11/81	25+
Hudson Refining Co. Inc.	Cushing, Okla.	19,000	12,150	12/82	11/83	6
Indiana Refining Inc.	Princeton, Ind.	5,000	0	12/80	2/81	23
Industrial Fuel and Asphalt of Indiana Inc.	Hammond, Ind.	7,600	0	12/81	6/82	25+
Mid-America Refining Co. Inc.	Chanute, Kan.	3,000	1,800	3/81	7/82	25+
Mobil Oil Corp.	Augusta, Kan.	50,000	83,900	9/83	9/83	25+
Northland Oil and Refining Co.	Dickinson, N.D.	5,000	0	2/81	2/82	7

PAD District/Refinery	Location	Crude Distillation Capacity (B/CD)	Total Downstream Capacity (B/SD)	Date of Last Operation	Date Shutdown	Years in Operation
Oklahoma Refining Co.	Cyril, Okla.	12,750	23,100	12/84	12/84	36 +
Oklahoma Refining Co.	Thomas, Okla.	11,600	0	12/84	12/84	4
Okmulgee Refining Co.	Okmulgee, Okla.	25,000	13,200	6/82	1/83	25 +
Phillips Petroleum Co.	Kansas City, Kan.	80,000	156,700	8/82	9/82	25 +
Texaco Inc.	Lockport, Ill.	72,000	136,000	4/81	10/81	25 +
Texaco Refining & Marketing Co.	Lawrenceville, Ill.	79,000	134,000	4/85	12/85	37 +
Texas American Petrochemical Inc.	West Branch, Mich.	11,500	3,200	9/81	2/82	25 +
Tonkawa Refining Co.	Arnett, Okla.	12,000	6,000	1984	1984	16
Tosco Corp.	Duncan, Okla.	47,000	85,000	1984	1984	4
Wireback Oil Co.	Plymouth, Ill.	1,800	1,800	2/81	3/81	25 +
Total		**985,750**	**1,348,500**	—	—	—
District 3						
Adobe Refining Co., div. of Funding Systems Refining Corp.	La Blanca, Texas	5,200	0	11/81	1/82	25 +
Bayou State Oil Corp.	Hosston, La.	3,000	0	1/81	3/82	25 +
Brio Refining Inc.	Friendswood, Texas	12,500	0	9/82	1/83	4
Bronco Refining Co.	Houston, Texas	2,250	0	4/81	7/82	1
Carbonit Refining Inc.	Hearne, Texas	11,000	0	2/81	1/82	6
Caribou-Four Corners, Inc.	Farmington, N.M.	2,200	2,400	1984	1984	19
Celeron Oil & Gas Co.	Mermentau, La.	11,000	0	1984	1984	6
Clinton Manges	Palestine, Texas	6,000	0	7/81	7/82	25 +
Conoco, Inc.	Alvin, Texas	33,274	0	10/85	12/85	22
Copano Refining Co.	Ingleside, Texas	11,100	0	9/81	2/82	4
Damson Gas Processing Corp.	White Deer, Texas	0	1,000	9/81	2/82	4
Dorchester Refining Co.	Mt. Pleasant, Texas	26,500	38,800	1984	1984	6
Dow Chemical U.S.A.	Freeport, Texas	190,000	143,000	8/81	6/82	1
Eagle Refining Corp.	Jacksboro, Texas	1,800	0	3/81	7/82	1
Eddy Refining Co.	Houston, Texas	3,250	0	1984	1984	36 +
Erickson Refining Corp.	Pt. Neches, Texas	30,000	0	12/81	8/83	4
Evangeline Refining Co.	Jennings, La.	4,500	0	12/82	1/83	25 +
Flint Chemical Co.	San Antonio, Texas	1,600	0	1/85	3/85	23
GHR Energy Corp.	Good Hope, La.	300,000	433,000	12/82	9/83	15
Giant Industries Inc.	Farmington, N.M.	13,500	5,000	5/82	11/82	7
Gulf Oil Corp.	Venice, La.	28,700	46,300	4/81	12/81	13
Hill Petroleum Co.	Knots Springs, Texas	57,400	62,000	1984	1984	7
Independent Refining Corp.	Winnie, Texas	50,000	63,000	10/81	8/83	23
Lake Charles Refining Co.	Lake Charles, La.	28,000	0	4/81	2/82	2
Listo Refining Co.	Donna, Texas	3,500	0	7/82	12/82	4
Longview Refining Co.	Longview, Texas	14,000	14,000	12/81	4/82	25 +
Mallard Resources Inc.	Gueydan, La.	7,400	0	11/83	12/83	4
Marion Corp.	Theodore, Ala.	25,000	14,500	3/83	9/83	15
McTan Refining Corp.	St. James, La.	19,300	0	7/81	8/83	6
Mid-Gulf Energy Corp.	Ingleside, Texas	39,400	20,000	1984	1984	3
Natchez Refining Co.	Natchez, Miss.	16,000	0	6/82	9/82	2
Petraco-Valley Oil Refining Co.	Brownsville, Texas	12,300	0	3/83	12/83	5
Placid Oil Co.	Mont Belvieu, Texas	8,500	0	1/82	7/82	2
Port Petroleum Co.	Stonewall, La.	3,200	0	1984	1984	5
Quintana Petrochem Co.	Corpus Christi, Texas	33,000	54,000	1984	1984	30
Quitman Refining Co.	Quitman, Texas	6,600	0	4/82	6/82	4
Rio Grande Crude Refining	Brownsville, Texas	9,500	0	6/81	6/82	3
Rio Grande Recovery Systems Inc.	Brownsville, Texas	1,000	0	5/81	2/82	2
Schulze Processing Inc.	Tallulah, La.	1,760	0	5/81	8/82	4
Shepard Oil Co.	Jennings, La.	10,000	0	5/81	2/82	4
Shore, Inc.	Kilgore, Texas	550	0	3/83	7/83	3
Sooner Refining Co.	Darrow, La.	8,000	32,200	1/82	2/82	2
Southern Union Refining Co.	Monument, N.M.	5,400	0	1/81	10/81	25 +
Southern Union Refining Co.	Lovington, N.M.	36,100	18,500	1984	1984	8
Southland Oil Co.	Yazoo City, Miss.	5,500	3,080	2/81	7/81	25 +
T & S Refining Co.	Jennings, La.	10,500	0	7/81	3/82	2
Tesoro Petroleum Co.	Carrizo Springs, Texas	26,100	3,500	1984	1984	27
Texaco Refining & Marketing Co.	Amarillo, Texas	20,000	24,400	4/85	12/85	37 +
Texas Refining Co.	Midland, Texas	2,500	0	4/81	6/81	1
Texas Standard Refining Inc.	Houston, Texas	1,800	0	1/81	10/81	(S)
Thriftway Oil Co.	Graham, Texas	1,184	0	4/81	11/83	25 +
Tipperary Refining Co.	Ingleside, Texas	7,320	0	1/82	3/82	4
Tropicana Energy Co.	Fort Worth, Texas	4,650	0	12/83	12/85	19
Vicksburg Energy Co.	Vicksburg, Miss.	6,000	0	1/85	9/85	7
Warrior Asphalt Co.	Holt, Ala.	5,500	2,000	1984	1984	30
Wickett Refining Co.	Wickett, Texas	8,000	0	1/76	2/82	25 +
Total		**1,163,494**	**932,480**	—	—	—
District 4						
Caribou-Four Corners Inc.	Woods Cross, Utah	8,400	8,200	1984	1984	21
C & H Refinery Inc.	Lusk, Wyo.	180	0	1/81	2/82	25 +
Gary Refining Corp.	Fruita, Colo.	15,200	27,100	2/85	10/85	4
Glacier Park Co.	Osage, Wyo.	10,000	0	2/81	3/82	4
Glenrock Refinery Inc.	Glenrock, Wyo.	6,000	0	4/81	9/81	5
Husky Oil Co.	Cody, Wyo.	11,500	17,800	6/82	9/82	25 +
Kenco Refining	Wolf Point, Mont.	4,700	0	10/85	12/85	11
Morrison Petroleum Co.	Woods Cross, Utah	6,000	0	12/85	12/85	11
Sage Creek Refining Co.	Cowley, Wyo.	1,000	0	1/82	6/82	17
Southwestern Refining Co.	La Barge, Wyo.	1,040	0	4/81	8/81	7
Texaco Inc.	Casper, Wyo.	21,000	35,500	3/82	7/82	25 +
Total		**85,020**	**88,600**	—	—	—
District 5						
Anchor Refining Co.	McKittrick, Calif.	9,000	7,000	11/82	2/84	6
Arizona Fuels Corp.	Fredonia, Ariz.	6,000	0	2/83	9/83	11
Coastal Petroleum Refiners	Bakersfield, Calif.	10,000	0	6/85	12/85	6
Demenno-Kerdoon	Compton, Calif.	10,000	2,000	1/83	8/83	6
ECO Petroleum Inc.	Long Beach, Calif.	0	7,000	1984	1984	8
Golden Eagle Refining Co.	Carson, Calif.	16,170	0	11/84	2/85	37 +
Marlex Oil & Refining Co.	Los Angeles, Calif.	21,100	0	1984	1984	7
Powerine Oil Co.	Santa Fe Springs, Calif.	44,120	100,100	1984	1984	34
Quad Refining Corp.	Bakersfield, Calif.	7,000	0	8/80	10/81	2
Road Oil Sales Inc.	Bakersfield, Calif.	6,000	0	1/81	1/82	9
Tosco Corp.	Bakersfield, Calif.	38,800	80,000	1984	1984	33
United Independent Oil Co.	Tacoma, Wash.	730	0	7/80	3/82	7
U.S.A. Petroleum Corp.	Ventura, Calif.	24,000	7,000	12/84	12/84	7
Total		**192,920**	**203,100**	—	—	—
U.S. Total		**2,615,464**	**2,754,760**	—	—	—

Source: Energy Information Administration, Petroleum Supply Annual 1985. Vol. 1, published May 1986.

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How Automation Helps Texas Jobber Grow
Proper Underground Tank Installation
Why Divorcement Laws Could Spread

NPN

The Changing East Coast Market

EAST COAST
SCORECARD
POS.
1
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PLAYERS
~~ARCO~~ ATLANTIC REF. & MKTG.
~~HUMBLE~~ EXXON
~~SOCONY~~ MOBIL
TEXACO
~~GULF~~/CHEVRON CUMBERLAND
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AUGUST 1987 VOL. 79 NO. 8

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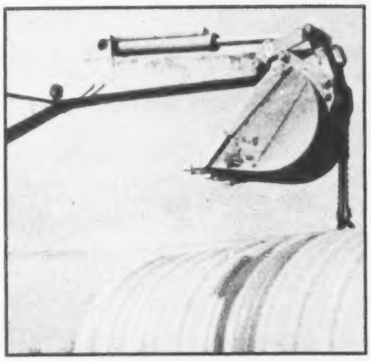
A new retail gasoline divorcement law is on the books in Nevada in part because of an internal "confidential" Arco document apparently asserting the company's intentions to eliminate dealer marketing. The fallout could be similar laws in other states. **Page 23**

Over the past 15-20 years, the East Coast has probably witnessed more change than any other part of the country. With changes still occuring at a breakneck pace, how is the marketer line-up shaping up for the years ahead? **Page 30**



The environmental protection agency's new underground tank regs will be in force early next year. But they won't protect anyone or anything if tanks aren't installed properly. **Page 44**

• TRENDS

Drilling Activity Rising: Sign of Better Times?

There are signs that the red corpuscle count in the oil industry's blood, which has been pretty anemic in recent years, may be increasing again and better times for suppliers and marketers could be ahead.

For example, current field reports say that more than 800 drilling rigs are active; and that seismograph teams are perking up in number as well as in spirit. Seismographic crews do the raw field research before drilling crews move in. Without them paving the way, there'd be little movement by drillers except for rank wildcatters who think drawing to an inside straight is perfectly normal in a high stakes poker game.

Don't be misled by that 800 number, however. It's much better than the 600-plus average for the first quarter of this year. And, compared with the same period of last year, it shows a significant gain. But again it's far, far below the peak number of 4,530 registered in the feverish days of December 1981.

The increased interest in drilling is a reflection of price improvements in crude oil and products. When crude prices plummeted to $10 bbl. in 1986, so did drilling activity and product prices. By June of this year, crude prices had struggled back an average of about $18 bbl. The futures market line had them above $20 bbl. at times.

But again, there's a caveat here: the futures market is a mirror image of speculator interest, not true market conditions, is fueled more by nonpetroleum opportunists than by direct petroleum interests. The game they play is to make a fast buck, not invest long-term. Thus futures markets are subjected to—and generally respond to—stimuli that's often as far-fetched as man-made scenarios can be hyped to be.

The binds that the industry finds itself strapped with these days are self-defeating. For example, independent marketers want to hang on to low-priced gasoline and fuel oil to encourage consumption. But they also need better cash flows to correlate to the higher economics of the $30 to $35 crude oil of recent years. So it is with the suppliers. They want to upgrade prices to build up cash flows which have to pay for the multi-billion dollar exploration and drilling programs. But they need the lower economics too to enable their downstream operations to compete. If it takes $20 crude oil to raise the red corpuscle count in the drilling field, this affirms contentions of many companies that $25 to $30 crude is essential for a renewal of the high-priced exploration programs of the past. Don't forget that exploration budgets were slashed in half in 1986 —from somewhere around $70-billion to about $30-billion in the U.S. alone.

It must also be recognized that as long as exploration activities in the United States poop along at the current level, so will production from domestic oil wells. This production is and has been declining steadily in recent years—it's down 700,000 b/d now—and projections are that it will continue to slump indefinitely. It takes years for newly discovered oil to go from the bottom of the oil well to the gasoline and fuel oil tanks of consumers. Such a downslide also portends that U.S. dependency on foreign oil will continue to rise to levels where price spikes, such as those in the '70s, could be commonplace again. Remember, U.S. oil imports increased by more than 1-million b/d in 1986 and were up another 20% in the first quarter of 1987 over the comparable 1986 level.

The recent decision by the OPEC countries to continue the restraints of the immediate past suggests that there will be crude oil and product price stability for the balance of 1987, or, at the outside, some relatively modest increases. If OPEC produces no more than the 16.6-million b/d it has targeted for itself—and even including the probability that Iraq, which refused to sign the pact, will selfishly push that total to 18-million b/d—the probability is that crude prices could rise to $20 bbl by the end of this year. The "benefits" should be helpful, encouraging and worrisome simultaneously as they radiate up and down in the petroleum industry.

—J. Richard Shaner

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

MAY	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$0.948	$0.888	$0.941	$1.079
Regions:				
Northeast	0.953	0.879	0.927	1.073
North Central	0.938	0.894	0.938	1.073
South	0.938	0.871	0.929	1.070
West	0.965	0.905	0.967	1.113

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	6/26/87	6/27/86
Gasoline (total)	230,436	228,006
Gasoline (Unleaded)*	34,892	120,074
Jet Kerosine	38,050	39,315
Distillates	102,527	104,547
Residual	37,901	37,968

**Included in gasoline total.*
Source: American Petroleum Institute.

Wisc., and Jeffersonville, Ohio, last year. The Los Angeles-based corporation now has about 90 truck lube centers at its Auto/Truck Stops nationwide, including 14 in the South, says Unocal spokesperson Jim Bray [*NPN*—Apr. 87, p13].

Big marketer turnout at joint convention

More than 900 attended the 32nd annual Mississippi-Alabama Oilmen's Convention June 21-24.

According to Jerry Wilkerson, executive director of the Mississippi Petroleum Marketers Assn., the key interests of marketers at the convention included slightly improved gasoline margins, new EPA underground tank regulations and insurance coverage. Alabama's underground tank cleanup fund was also a major topic, says Jeff Barber, executive director of the Alabama Oilmen's Assn.

Hines named AOMA executive director

Ann Hines, a 14-year veteran with the Arkansas Oil Marketers Assn., was appointed executive vice president of that association shortly before the group's Annual Convention in Hot Springs, Ark., in late June. Hines, who had served as AOMA's acting executive vice president after Bob Arnold resigned late last year, is now one of only a handful of female state association executives.

The convention set new records in attendance (612) and trade show booths (112). Hines notes that although there was concern about impending federal excise taxes and underground tank regulations, the mood of marketers at the convention was upbeat and positive.

Tune-Lube Corp. plans expansion

The professional auto racing circuit isn't the only place three-time Indianapolis 500 winner Johnny Rutherford intends to make his mark.

Rutherford is chairman of the board of Johnny Rutherford Tune-Lube Corp., a San Antonio, Texas, chain which he formed in 1984, and is now leading an aggressive expansion program.

He plans to establish over 300 Tune-Lube centers by 1990 via a master franchising program which offers exclusive rights to protected U.S. territories. The corporation has already received commitments to build 103 centers in New Jersey and Michigan.

Unlike other tune-up and lube outlets, the Rutherford centers provide simultaneous tune-up and oil change services.

With the closing of more than 150,000 full-service stations and 3,000 car dealerships over the past 10 years, Rutherford says, consumers have been left holding the bag in terms of car maintenance.

By Mark Emond

WEST

Is a Methanol Marketing Niche Shaping Up in the West?

Methanol as a neat or near-neat motor fuel is a long way from gaining general consumer acceptance anywhere in the world, but it is beginning to become an issue for gasoline marketers to take cognizance of in California and perhaps neighboring states.

Arco has already announced plans to market a methanol motor fuel at 25 stations in southern California by the end of 1988 [*NPN*—July '87, p18] in a cooperative program with the California Energy Commission (CEC).

Chevron has reported since then that it has told the CEC it is willing to offer methanol at selected stations in California, depending on the number and location of methanol vehicles. Conversations are understood to be going on between CEC and other oil companies.

Since California began exploring methanol as an alternative motor fuel eight years ago, a chain of about 24 methanol stations has been set up in the state, operated by independent marketers under contract. The methanol fuel currently being distributed is M85, which is 85% methanol and 15% unleaded gasoline.

Presumably other major oil companies, and perhaps some independents, will also cooperate with the state in establishing a retail methanol network, so that in this limited sense, methanol marketing is already here.

California has other plans to overcome the chicken-and-egg dilemma, including mandatory marketing of mixed-fuel vehicles in the state. These are vehicles which can operate alternately, with the flick of a switch, on either gasoline or methanol fuel [*NPN*—July '87, p14].

Nobody except perhaps a small circle of devotees in the California energy bureaucracy is seriously considering that methanol will become a widely available motor fuel before the next century, in all probability, but it's just possible that some marketers could already be taking steps to get a jump on what appears to be developing as a niche.

How fast a market could develop, under what circumstances, and at what cost, was the subject of CEC hearings held in preparation for a biennial report the agency must make to the state legislature.

At a hearing in Los Angeles in June, Chevron and Unocal made it clear there is nowhere near enough methanol in the world to supply it as a transportation fuel in California or anywhere else, and that building the plants to do so would cost many billions of dollars.

As a case in point, Unocal's manager of planning and economics, E.J. Eliskalns, cited southern California with its gasoline demand of about 6-billion gal. a year. Since it takes about 1.8 gal. of methanol to equal 1 gal. of gasoline, this translates into a methanol demand of 10-billion to 11-billion gal. a year.

"This volume by far exceeds the entire free-world production capacity," he said, which is about 7-billion to 8-billion gal. a year. Of that total, about 1-billion gal. a year is currently surplus, with approximately half of that in the U.S.

Moreover, he said the marketing distribution system would have to be 80%-90% larger to handle methanol rather than gasoline, requiring construction of more

Four Scenarios: Price of Methanol vs. Worldwide Demand, Including for Transportation Use, 1990-1995-2000

(millions of gal., cents per gal.)

	California				United States			
	Low Demand		High Demand		Low Demand		High Demand	
Year	Demand	Price	Demand	Price	Demand	Price	Demand	Price
1990	3,200	36¢	3,220	36¢	3,200	36¢	3,350	36¢
1995	3,930	40	4,010	40	4,890	45	16,900	50
2000	4,830	45	4,950	45	8,950	46	31,700	55

Source: Jack Faucett Associates, Bethesda, Md.
Note: Prices are ex-tax, FOB Los Angeles, 1986 dollars.

pipelines, storage tanks and trucks.

As for price, Eliskalns estimated methanol produced from natural gas costs about 60¢ per gal., or about $1.10 per gal. of gasoline equivalent, and from coal about $2.15 per gal. of gasoline equivalent, compared with the present pretax wholesale price of gasoline in Los Angeles of 56¢ per gal.

Chevron USA's manager of strategic planning, Martin A. Javinsky, told CEC that despite methanol's relatively low cost now, eventually the cost of using methanol as a transportation fuel could be huge. "We shouldn't be fooled by today's methanol prices," Javinsky said, "Any sizable displacement of gasoline by methanol will carry a sizable cost."

For example, to replace gasoline with methanol in California "would require about four times the total methanol capacity of the noncommunist world." This would require about 100 methanol plants of 250-million gal.-a-year capacity with a price tag of $20-billion to $30-billion, he said.

Although CEC and others claim the price of methanol would be even lower in the future because of the large quantities involved in transportation, some don't think so. Michael F. Lawrence of Jack Faucett Associates (JFA), a research firm based in Bethesda, Md., told CEC that in the range of scenarios the company considered, "the price of methanol increases as the demand for methanol increases."

JFA considered high and low methanol consumption scenarios in California and the nation for the years 1990, 1995 and 2000. Even in the case of high demand nationally, including transportation, the price of methanol (FOB Los Angeles, excluding taxes, 1986 dollars) would be 50¢ gal. in 1995 and 55¢ in 2000, compared with 36¢ in 1990 (see table).

Chevron's Javinsky said methanol may be able to compete economically with gasoline and diesel fuel, but only in the long run, "perhaps early in the next century—assuming crude oil prices have doubled or tripled (in today's dollars) by then—coming from such remote locations as Alaska, the Middle East, Indonesia, and Africa.

The remote locations have large supplies of natural gas with no nearby markets, and are presumed to be the ones that would supply most of the huge methanol requirements for transportation.

This dependence on remote supplies raised a question by a Chrysler planning specialist, Beverly Bunting, who said, "Since one intent of a methanol program is to promote energy security, we caution against trading our present dependence on foreign oil and gasoline for future dependence on foreign methanol."

These and other statements established pretty clearly that widespread use of methanol as a motor fuel is some distance down the road. But how fast the fuel comes into some practical level of use depends on what California decides to do.

It could be that a niche is in the making. Some niches have proven to be very profitable. Unocal's successful sale of leaded premium gasoline for many years after other major companies stopped marketing the product is a lesson gasoline marketers might remember.

Colorado requires oxygen in gasoline

Colorado's regulation that all retail gasoline sold on the "front range" in the winter must contain 1.5% of oxygen by weight is going ahead despite opposition by several oil companies and the jobber association.

In late June, the Colorado Air Quality Control Council decided to begin requiring the fuel modification Jan. 1, 1988, instead of Dec. 1, 1987, giving refiners and marketers another month to get ready.

Oil companies had hoped Colorado would call off the program or at least postpone it until more was known about the effects and cost. Originally the rule was supposed to go into effect Nov. 1. In future years, the oxygen content will have to be 2%.

Colorado believes the burning of oxygenates in gasoline from Fort Collins to Colorado Springs from Nov. 1 to March 1 will help reduce carbon monoxide pollution that peaks during those months. Refiners usually use MTBE (methyl tertiary butyl ether) for this purpose, while blenders usually use ethanol.

The combination of the two can be a big problem, says Roy Turner, executive vice president of Colorado Petroleum Marketers Assn., Denver. The presence of both volatile components can cause vapor lock. Pump labeling may help, but considerable public education would be required to make it work.

He reports some refiners believe MTBE blending will raise the price of gasoline 3¢-8¢ gal. This could cause some distribution dislocations since some gasoline manufactured in Denver is transported to areas where oxygenates are not required.

Marketers expect more C-stores

Petroleum marketers are expecting the further spread of convenience-store stations in the West, if that's possible. In a market some already consider saturated, the announcement that Kroger Co.'s Dillon C-store organization had acquired an independent regional chain based in Casper, Wyo., wasn't the best of news.

The 115-store Mini Mart chain was sold by Rod Kinskey, who started expanding 20 years ago from a string of dairy outlets. Gasoline is sold at 111 of the units, located in Colorado, Nebraska, Wyoming, Montana and the Dakotas.

Dillon, based in Hutchinson, Kan., was purchased by Kroger three years ago. Prior to the Mini Mart acquisition, it had 740 C-stores under various names operating coast to coast. Loaf 'N Jug in Colorado and Quick Stop in California are two of its other brands.

By J. Richard Shaner

EAST COAST

NEFI Show and Convention Draws Record Attendance

Fear not about the future of New England Fuel Institute. The overflow crowds at its 22nd biennial trade show and several SRO sessions at its Silver Anniversary convention in Boston in June are considered eloquent testimonials in their own right that NEFI continues to enjoy solid support in the northeast.

There had been some concern in industry circles that the association might have more problems on its hands than it knew what to do with in the wake of the retirement of the long-time president, Charles Burkhardt, and the abrupt resignation of his successor after only three months in the saddle [*NPN*—Sept. '86, p40].

The resignation caught just about everyone flat-footed and there were questions about whether NEFI would be able to handle things without a dominant leader in the house.

The NEFI board elevated administrative vice president Bernard Smith, a longtime staff member, to acting president. It also began a self-analysis of its operations and programs to respond to internal pressures for change and expansion "beyond Boston." Some industry people had their

Forecast Confirms $1.04 gal. Gasoline, But Not Until Next Year

It's going to take a bit longer to get there but government forecasters now anticipate the average retail price of gasoline will be around $1.03 to $1.04 gal. in the first half of 1988. This is the all-types average, meaning all grades and services.

The government, in its first 1987 projections back in January [*NPN*—April '87, p28], had indicated the $1.03 level would be attained in the third quarter of this year—July, August and September, when the summer driving season is underway in earnest. Instead, pump retails are expected to be around $1 gal. during this period.

Relatively flat street prices and high stocks throughout the first half of 1987 were blamed for pushing the anticipated increases back a bit, according to the Energy Information Administration's latest short-term energy outlook, dated April but not published until late May.

At that, however, the 1987 average of 97¢ gal., as now projected, will be 4¢ gal. above the 1986 average. The first-half 1988 average of $1.03 will be 6¢ gal. above 1987 and a full 10¢ gal. above the full year 1986.

Even though that looks good, however, it must be remembered that it's still another 10¢ below the 1984 and 1985 averages of $1.20 gal.

Diesel fuel will fare better this year, rising 5¢ gal. in 1987 and 7¢ gal. more in the first six months of 1988, the forecast says.

Gasoline demand will be about the same this year as last, and a slight decline of maybe 10,000 to 12,000 b/d is in sight for the first half of 1988.

The ratio between unleaded and leaded

Short-Term Forecast: Minor Improvements in Sight

By The Years

	Projections		History		
	6 Mos. 1988	F.Y. 1987	F.Y. 1986	F.Y. 1985	F.Y. 1984
DEMAND (million b/d)					
Motor Gasoline (total)	6.90	7.02	7.02	6.83	6.77
Leaded	1.61	1.76	2.17	2.43	2.78
Unleaded	5.30	5.25	4.85	4.41	3.99
Distillate Fuel Oil	2.98	2.87	2.90	2.87	2.84
% Unleaded vs. Leaded	77%	75%	69%	65%	59%
Residual	1.32	1.26	1.40	1.20	1.37
Total U.S. (a)	16.07	16.13	16.14	15.73	15.73
(a) Includes all oils.					
PRICES (per gal.)*					
Motor Gasoline**	1.03	.97	.93	1.20	1.20
No. 2 Diesel	1.00	.93	.88	1.15	1.15
No. 2 Heating Oil					
Wholesale	.57	.52	.49	.78	.83
Retail	.89	.82	.84	1.05	1.09
Residual***	.43	.40	.34	.61	.69

By The Quarters

	Projections						History	
	1988		1987				1986	
	1Q	2Q	1Q	2Q	3Q	4Q	1Q	2Q
DEMAND (million b/d)								
Motor Gasoline (total)	6.65	7.15	6.62	7.23	7.18	7.04	6.64	7.09
Leaded	1.55	1.66	1.69	1.89	1.80	1.67	2.15	2.27
Unleaded	5.10	5.49	4.93	5.33	5.39	5.36	4.49	4.82
% Unleaded vs. Leaded	77%	77%	74%	74%	75%	76%	68%	68%
Distillate Fuel Oil	3.28	2.67	3.22	2.69	2.54	3.03	3.28	2.73
Residual Fuel Oil	1.48	1.15	1.35	1.23	1.21	1.24	1.42	1.34
Total U.S. (a)	16.36	15.77	16.21	15.91	15.99	16.42	16.06	15.86
(a) Includes all oils.								
PRICES (per gal.)*								
Motor Gasoline**	1.02	1.04	.90	.97	1.00	1.00	1.10	.93
No. 2 Diesel	.99	1.01	.89	.91	.95	.97	1.04	.87
No. 2 Heating Oil								
Wholesale	.57	.56	.50	.52	.52	.54	.61	.44
Retail	.90	.87	.79	.78	.81	.89	.97	.77
Residual***	.44	.43	.41	.40	.40	.41	.47	.31

* All prices include taxes except No. 2 heating oil; ** Average price for all grades and all services; *** Average price for all grades of sulfur.

Source: Energy Information Administration, Short-Term Energy Outlook, April 1987, published in late May.

gasolines continues to expand in favor of the new motor fuels. The 1987 average is expected to be 75% for unleaded and the first half of 1988 is expected to see another rise to 77%. This confirms the continuing trend that by the early 1990s leaded gasoline sales will be down to 10% or less of the national market.

No. 2 heating oil demand is expected to be up modestly this year, but average prices are expected to be down 3¢ gal. at wholesale and 2¢ gal. at retail.

Residual, which experienced a 17% increase in 1986, is facing a 10% drop this year and continuation of the decline pattern in first half 1988.

Domestic crude oil production, the forecasters say, will average 8.2-million b/d in 1987, down 5.4% from 1986, while net imports of petroleum—crude and products—will average 5.7-million b/d, up 7% from 1986. Imported crude oil is projected at $17.80 bbl. in 1987, up 27.3% from 1986's disastrous low average of $13.98.

Divorcement Legislation Remains at a Standstill

Not much movement is anticipated on federal retail divorcement legislation—the Motor Fuel Sales Competitive Improvement Act—sponsored by Sen. Howard Metzenbaum (D-Ohio).

The bill would keep the top 15 refiners from operating stations directly with their own employees or with contract management. Although they could still own stations, the refiners would have to lease their operations to dealers to run them. Moreover, the bill's "open supply" provision would, according to Metzenbaum, "prohibit refiners from requiring that service stations purchase all or almost all supplies from a single source."

The PMAA reaffirmed its opposition to the bill at its recent spring convention in May. The association's communications director David Morehead states that, "The answer to headaches is not decapitation. If refiners won't be allowed to operate stations, who is going to say jobbers won't be next?"

SSDA asserts that "this bill is necessary if American motorists are to continue to enjoy the benefits of a truly competitive retail gasoline market . . . Retail divorcement simply prevents major refiners from operating retail outlets and manipulating the retail market by exerting their inherent control over their franchised dealers."

The American Petroleum Institute (API) disagrees, stating that a study by two Purdue University professors shows that a state divorcement law in Maryland has cost consumers ". . . millions of dollars in higher gasoline prices" and reduced the number of hours open by more than nine hours a week.

Health Insurance Bill Faces Stiff Resistance

Sen. Edward M. Kennedy (D-Mass.) says the bill he introduced for mandatory employer-provided health insurance "will require that every working American have access to at least a minimum package of health insurance," but not "Cadillac plans for first dollar coverage . . ."

The bill, which would affect an estimated 24.3-million persons, calls for a minimum of 80% of the cost of medically-necessary hospital services (with no annual limit on the number of days), physicians, diagnostic tests, plus pre-natal and well-baby care. Co-pays would be limited to 20% of the fee for any service. Deductibles would be held to $250 a person or $500 per family and pre-natal and well-baby care would have no co-pays or deductibles. Catastrophic illnesses would be included with out-of-pocket expenses limited to $3,000. These figures may change during debate on the bill.

Employees earning less than 125% of the federal poverty line would pay nothing and no worker could be excluded from the coverage or subjected to pre-existing conditions based on health status, a provision included in some private plans. Employees working less than 17½ hours a week would not have to be covered. New, small businesses—those less than two years old with less than 10 employees—would have to supply only catastrophic coverage.

9

The plan's cost to employers has been estimated at $20-billion, but Kennedy says the price to individual employers per person would be about 40¢ an hour.

Strong opposition is expected to the bill from small and medium-sized business groups, including the Society of Independent Gasoline Marketers of America (SIGMA), the National Assn. of Convenience Stores (NACS), the Petroleum Marketers Assn. of America (PMAA) and the National Assn. of Truck Stop Operators (NATSO). Although the American Petroleum Institute (API) and the Service Station Dealers of America (SSDA) had not taken a position as of June, SSDA says it is "not happy" with the legislation as written.

One possible snag in the Kennedy plan could be a proposed requirement by Sen. Dan Quayle (R-Ind.) which calls for "an objective analysis of the impact of any legislation mandating benefits on domestic employment and American competitiveness." The Small Business Administration has testified that mandated health benefits might cause some small companies to fire workers, thereby raising the numbers of the uninsured.

Governor Vetos Maryland Station Security Bill

Maryland's Governor William D. Schaefer vetoed a bill which would have imposed tough new security measures at all night service stations.

The bill, passed in the state's House by 121-0 and Senate by 33-13, was strongly supported by the Greater Washington-Maryland Service Station and Automotive Repair Dealers Assn. and the Service Station Dealers of America. Among the bill's opponents were Sun Co. and Mobil Oil, as well as, Crown Petroleum Corp., a Maryland-based oil company which requires its stations to be open 24 hours.

The bill would have applied to stations open at least 18 hours a day, but not to convenience stores, and allowed until the mid-1990's to fully comply with its requirements. Among these requirements were building "armored kiosks" with bullet-proof windows, using heavy duty bolts, operator controlled locks, secure cash drawers and remote controlled pumps.

Crown Petroleum chairman Henry A. Rosenberg, Jr., claimed in a 12-page letter to Governor Schaefer and in a subsequent veto hearing that the bill was "irrationally discriminatory . . . prohibitively costly . . . unconstitutional . . . vague and ambigious." He predicted that the price of security, up to $60,000 per station according to his estimate, would be passed on to consumers.

However, Roy Littlefield, executive director of the dealers' association, estimated the security cost per station to be only $6,000. At the veto hearing, Littlefield asserted that Crown dealers said, "If Crown would put in the security, we'll pay for it."

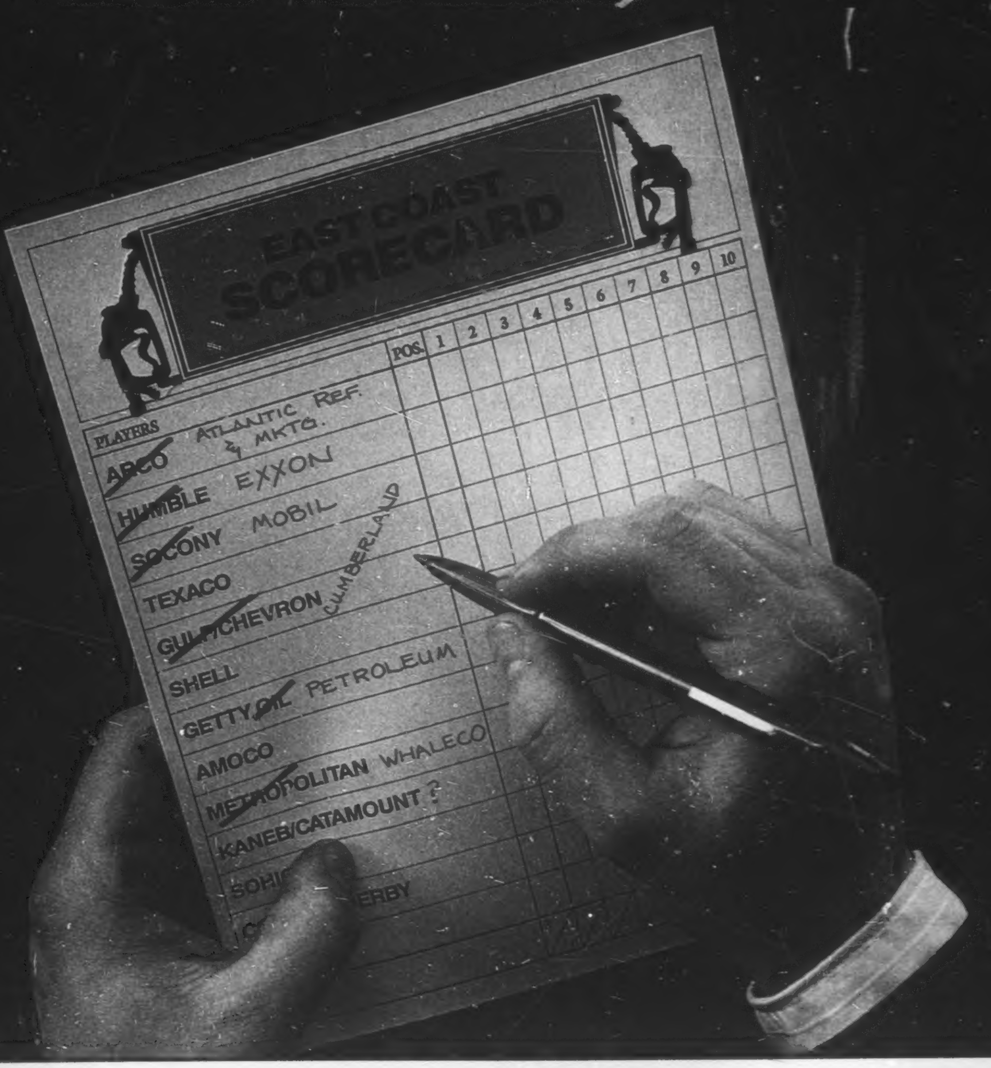
The odds for a veto increased at the hearing when Lt. Gove. Melvin A. Steinberg was very critical of the bill.

The Mid-Atlantic Petroleum Council and the Maryland Petroleum Council remained neutral on the proposed legislation. The National Assn. of Convenience Stores, the National Assn. of Truck Stop Operators and the American Petroleum Institute took no stand.

The Maryland legislature was the first in the nation to endorse strong security measures for all night stations.

COVER REPORT

The Changing East Coast Market: What's The Score?



As a marketplace—or, better yet, a contiguous network of big, small and interrelated businesses from Maine to Florida—the East Coast isn't the least bit unique in the way it buys, sells and consumes billions of gallons of oil.

That, however, is only one side of the coin. The other side is different, vastly different, because it concerns the thousands of suppliers and vendors of these billions of gallons of gasoline, fuel oil and similar products, and the regional enterprises and systems that sometimes eat each other alive.

Over the past 15 to 20 years, for example—the time span it takes for newborn tykes to get from swaddling clothes to commencement mortar boards—the East Coast has probably witnessed more pressure-pot change than any other section of the country, including the always volatile Pacific Coast [*NPN*—May '87, p34].

By J. Richard Shaner
Executive Editor

The last half dozen years alone border on the fantastic.

Consider, for example, the explosive story of Getty Petroleum Co. Five years ago Getty, then known as Power Test Corp., was a nonentity in marketing, hardly known in or out of its five-state surroundings. In 1984, it jumped suddenly into 11 states, 2,500 stations and refined product volume of 1.5-billion gal. a year when Power Test bought Getty Oil Co.'s East Coast marketing facilities. Last fall, it was dreaming about additional expansion, preferably national in scope [*NPN*—Oct. '86, p44]. Today it's on the verge of extending its "empire" to 23 states, 3,500 service stations, two refineries, and refined product sales around 3.5-billion gal. with its $450-million offer for Clark Oil & Refining Co. in the Midwest (See related story on Page 12).

Consider, for example, the Cumberland Farms extravaganza. As recently as three years ago, its chief claim to fame was its ranking as the third largest convenience store chain with maybe 300-million gal. of gasoline sold at half of its skein of 1,000 stores up and down the East Coast. Today, it is the nation's biggest independent retailer of gasoline with a volume in excess of 2-billion gal. and a virtual stranglehold on an old 100,000 b/d refinery in Newfoundland that's being rehabilitated for its exclusive use and is scheduled to come on stream later this summer.

Consider, for example, the rise and fall of Charter Oil Co., which soared out of Florida and up to Maine in 1982-83 as a high flying marketer of gasoline and fuel oil and a volume of close to 350,000 b/d of mixed product. Today, just out of Chapter 11 bankruptcy, it's struggling to hang on to its original network of service stations and C-stores in the south and southeast and its resid operations in the midlands. It has sold off most of the other stuff and even walked away from joint ownership of a refinery with Chevron in the Bahamas. Its disposal of Northeast Petroleum brought a Goliath, Cargill, Inc., (the billion-dollar international grain trader and cargo hauler) into the Northeastern marketplace as a wholesaler with a determination to expand the toe hold it had gotten in its $100-million "bargain."

Consider, for example, the spectacular emergence of derring-do enterpreneurs like John Deuss, a virtual recluse as far as the domestic industry was concerned, an international broker who created Atlantic Refining and Marketing Co. in 1985 and now says he wants it to be doing 500,000 b/d by 1990; or Irik Sevin, a young ex-Wall Streeter who bought a broken down fuel oil business in 1982 and converted it into the largest in the nation, with a retail volume of more than 250-million gal. a year; or Egyptian-born Mahmoud Wahba, who gave up teaching in New York City to buy a small Connecticut jobbership, doubled his volume past the 100 million gal. mark with the surprise purchase of four other jobberships from the retreating Chevron, and is now aiming at 150-million gal. in the immediate future. All this in two or three years!

Consider, for example, the near-collapse of the residual fuel oil business which, as recently as 10 years ago had an annual sales volume of more than 1-billion bbl., most of it on the East Coast. Today it does less than half of that. And look at the distillate market which not only is important to the East Coast but has shrunk too, down more than 25% in recent years with an attendant loss of customers and the independent businesses that supplied them.

There are other examples—many more that could be cited easily.

These few, however, give some dimension to the turbulence and change in recent years that have been reshaping the Atlantic Coast marketplace. For the purposes of this article, this East Coast marketplace is considered to be the six New England and three Middle Atlantic states and the six southern states whose shores are readily washed by Atlantic Ocean waters.

Static Volumes

An interesting aspect of this East Coast picture is that the market volume of gasoline really hasn't changed that much through the years. In 1970, the U.S. as a whole consumed roughly 80-billion gal., of which the East Coast accounted for 34%. Today the U.S. volume exceeds 110-billion gal., and the East Coast relationship is still only 35%.

The service station population on the East Coast has declined too, just as it has in the rest of the nation. Today there are probably 50% fewer stations than there were in the early '70s. But the surviving stations are bigger, better located and better equipped to handle much larger volumes. Except for New Jersey, where self-service is still banned, most of the East Coast stations offer the do-it-yourself formula.

Fifteen to 20 years ago, good stations averaged around 30,000 to 35,000 gal. monthly and the woods were full of 10,000 to 15,000 gal. "Mom and Pops." Now, 100,000 to 200,000 gal. month stations are commonplace. Getty recently said it had one doing 500,000 gal. month, a level more typical of the Southwest and West Coast than the East Coast.

Name Changes

One of the truly remarkable changes that has taken place on the East Coast is the lessening of major company dominance.

A few decades ago, for example, there were at least a dozen corporate names of great and continuing importance in the East, including such now all-but-forgotten identities as Sinclair, Humble, Tidewater, Richfield of New York, Atlantic Refining of Philadelphia and so on. They were absorbed in the passing or changed, such as Humble which became Exxon when Esso couldn't be used because of legal restrictions; and Richfield, Atlantic and Sinclair which became part of the brash youngster named Atlantic-Richfield Co. in the late '60s; Standard Vacuum, thence Socony Vacuum, thence Socony Mobil and now Mobil in its own right; Tidewater which was replaced by the corporate name of Getty Refining and Marketing which became known, in substance, as Getty East.

By way of contrast, this galaxy of majors and semi-majors has been reduced to maybe a handful at best: say Exxon, Texaco, Mobil, Shell and Sun. Getty has been salvaged as a corporate name by Power Test which stepped aside a year ago and became a subsidiary. So has Atlantic, whose history dates back to the 1860s. It has been reincarnated by the new Atlantic Refining and Marketing Co. of John Deuss [*NPN*—Dec. '85, p30].

Marketplace dominance also has changed. Humble not all that long ago held the biggest market shares in more than half of the Atlantic seaboard states, with Mobil a reasonably close second. Today, it's pretty well Shell and Mobil, especially in New England where Amoco and Exxon have retrenched considerably. Amoco, for example, seceded from Maine, Vermont and New Hampshire in 1982, and last summer pulled out of Massachusetts, Rhode Island and all of Connecticut except the affluent southwestern corner abutting New York state.

Arco's decision to abandon all marketing east of the Rockies and Chevron's withdrawal from the East Coast, except for a small segment in the midlands, also have had dramatic impact on the distribution systems. So has the retreat from New England by Amoco and the strengthening of their positions in this marketplace by Shell and Mobil, both of which have been selectively buying stations. Shell hit a jackpot, however, when it acquired more than 400 ex-Arco stations in the northeast, all big volume units.

Residual Gulf Problems

Chevron's withdrawal opened the door for Cumberland to purchase all of the Gulf stations acquired by Chevron in its acquisition of Gulf in the early '80s, and more than 5,000 Gulf-Chevron stations in the Southeast by Standard of Ohio, which put them under subsidiary BP and moved into a whole new world.

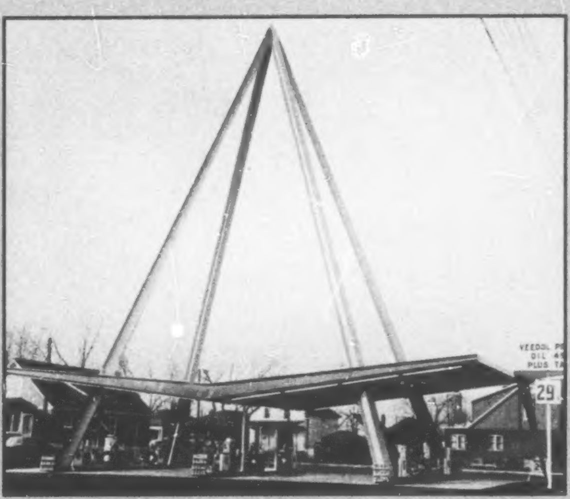
Chevron held on to a group of stations in the Maryland, D.C. and Virginia areas and the old Gulf refinery in Philadelphia and said it planned not only to stay here but to build up its business volume.

This creates a unique situation in the use of the Gulf logo, not so much for the

(Continued on Page 34)

ARCO
Coast to Coast

1



3

Former all-stars in the Eastern marketing league

1. Arco, onetime East Coast biggie, saw greener pastures on the other coast and pulled up stakes three years ago.

2. A "Tiger-In-Your-Tank" gained fame for Humble, former East Coast market kingpin, now Exxon. Company donated Royal Bengal tiger "Bamboo" to the Baltimore zoo.

3. The frame tells the name of this outlet of a major Eastern marketer of years past. Did you guess Tidewater Oil's "Flying A"?

4. Chevron, a major East Coast player until recent years, now confines itself to the Maryland, D.C., Virginia area.

5. The Gulf flag still flies in Eastern markets, but under different ownership: Cumberland in the Northeast, Sohio/BP in the Southeast.

CHEVRON
CHEVRON
EXPERT AUTO REPAIRS
MECHANICS ON DUTY
BRAKES RELINED
TUNE-UP
•BRAKES
MOTOR TUNE-UP
•STARTERS
•GENERATORS
•IGNITION

4

2

Gulf
QUALITY OIL CO.
DISTRIBUTORS OF GULF PRODUCTS
Gulf

5

(Continued from Page 31)

present but in the days to come. Cumberland Farms says it has evergreen entitlement to the use of Gulf in the Northeast and has no intention of letting the name die. Sohio/BP also has been guaranteed use of the Gulf logo in the Southeast for a period of eight to 10 years, or longer.

Since both companies operate from Maine to Florida, will the day come when the Gulf logos bang into each other at the midlands? Or will some future date cause a serious conflict of identities and market strategies with two different companies using the same name in parallel territories?

Major Traumas

Probably the biggest "happenings" on the East Coast in recent years were the withdrawals of Arco and Chevron from the marketplaces; Arco especially because it meant the elimination of an extremely difficult competitor whose low prices caused many jobbers and retailers to go right up the wall at times.

As an exponent of C-stores, self-service and big volume stations with small margins, Arco rolled the East Coast marketplaces just as it did elsewhere in the country.

In leaving, however, Arco enabled Shell to buy a little more than 400 exceptional stations in New England. It also led to the unexpected entry of Dutch-born John Deuss, an international oil trader with U.S. offices in New York and Houston, into the retail gasoline markets in New York and Pennsylvania.

1987, and a new line-up emerges

6. Coastal Oil has recently announced intentions of expending in the East with its Derby brand.

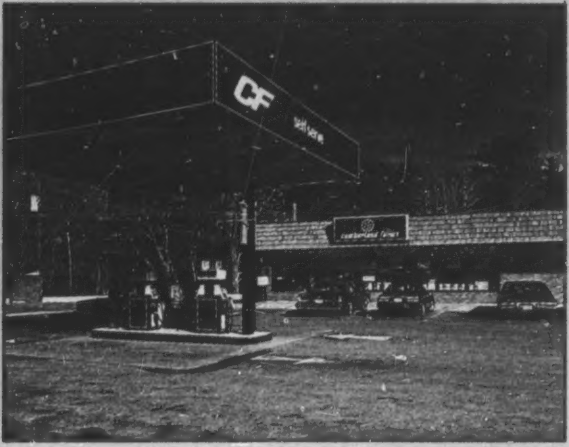
7. International oilman John Deuss is shooting for a half-million b/d volume by 1990 with his Atlantic Refining and Marketing Co.

8. In three years, Cumberland Farms has become the nation's top ranked independent retailer of gasoline.

9. Getty Petroleum, born Power Test, is the fastest growing gasoline retailer, just recently expanding to 23 states and 3,500 stations.

7

6



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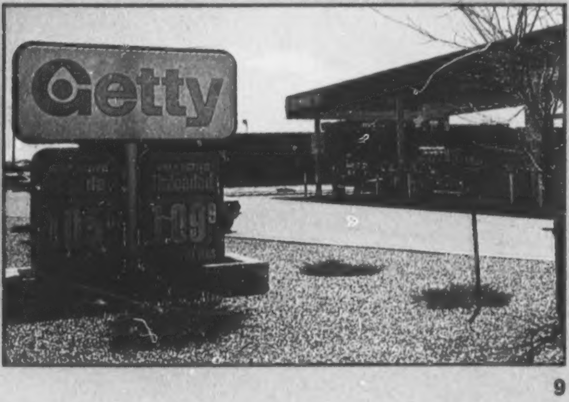

9

He started out with 500-odd stations and supply contracts in these two states; currently he is supplying almost 1,000 stations in eight states. He says he's moving 200,000 b/d of product now (including fuel oils) and wants to expand from Maine to Florida so that he can achieve a goal of 500,000 b/d by 1990. That figure, 500,000 b/d, equates to a staggering 7-billion gal. of gasoline, distillate and resid.

Chevron's departure from the Northeast and Southeast made a frontrunning gasoline retailer out of Cumberland Farms and thrust Sohio/BP into the southeastern marketplaces where competition for volume is almost as rough as that on the West Coast.

Not given to talking about itself, Cumberland is family owned and operated. Since its $500-million purchase of the Gulf-Chevron network in the Northeast, however, it has assidously applied itself to repositioning the C-store business into a major gasoline network, all the time saying nothing more publicly than it really had to.

It has successfully soothed the jobbers and retailers it got from Gulf. It has relocated its gasoline headquarters into a new building which can house all of the expanding petroleum units. It has built up its sales and marketing staffs and has let it be known that its interest in additional expansion is eager and active.

One of its slickest accomplishments was the Newfoundland refinery deal in which the virtually abandoned facility is being rehabilitated by a Massachusetts investment group, with Cumberland to

East Coast boxscore: Indies up, majors down

supply all of the crude oil and buy all of the product—60,000 b/d of gasoline and 40,000 b/d of distillate and resid for its own outlets. In substance it has all the advantages of being a refiner-marketer without the investment cost and responsibilities of actually being a refiner. Some industry sources said this could give Cumberland a 2¢ to 4¢ edge in gasoline prices. The refinery was scheduled to come on stream this summer. This influx of new product could stir things up in marketplaces already oversated with goods to sell. Cumberland recently extended its 90,000 b/d contract with Chevron so that it seems to be in solid position for its supplies for an indefinite period.

Fuel Oil Panorama

The East Coast traditionally has been the greatest marketplace of all for distillate and residual fuel oils. But this has been deteriorating lately.

As recently as 1978, distillate fuel oil

East Coast Marketplace: Gasoline Goes Up While Fuel Oils Slip Badly

The gasoline and fuel oil marketplaces on the Atlantic Seaboard are studies in contrast—one keeps going up, in lock step with the nation, while the other continues to erode for a variety of reasons, including natural gas competition and environmental pressures.

Gasoline consumption on the East Coast is up 20% since 1970. There's nothing really surprising about that because national consumption has grown too, a bit more perhaps, but nevertheless comparably.

If anything can be considered surprising, it's the contra-industry increase in distillate fuel demand in the Carolinas, Georgia and Florida. This reflects the greater use of diesel-powered trucks in the coastal states.

The distillate and residual fuel oil statistics confirm the continuing erosion of light and heavy fuels in the space-heating marketplaces. Distillate sales, for example, are still 1-billion bbl. a year for the country as a whole but on the East Coast, and particularly the Northeast, they're down dramatically.

It hasn't been that long since more than half of the distillate sold in the U.S. was consumed on the East Coast, most of it in the space-heating marketplaces. Today, that consumption relationship is down to 35% too.

The diesel share has grown rapidly at the same time. From a mere 20% in 1970, it has almost doubled to 39%, and indications are that this growth will continue for some time.

Principal Product Consumption 1970-1986

	1970	1975	1980	1986(*)	% Chng '86 vs. '70	'75	'80
GASOLINE (billions of gal.)							
New England	4,695	5,238	5,179	5,620	20	7	8
Middle Atlantic	12,658	13,845	13,634	14,119	12	2	4
South Atlantic	13,803	16,430	17,178	19,288	40	17	12
East Coast Total	31,156	35,613	35,991	39,027	25	10	8
U.S. Total	89,405	104,507	106,378	111,797	25	7	5
% East Coast	35%	34%	34%	35%	—	—	—
DISTILLATE (millions of bbl.)							
New England	117.1	109.7	85.4	74.9	(36)	(32)	(12)
Middle Atlantic	238.0	229.8	193.3	154.6	(35)	(33)	(20)
South Atlantic	114.3	122.9	136.3	139.7	(23)	(8)	(3)
East Coast Total	469.4	462.4	415.0	369.2	(21)	(20)	(11)
U.S. Total	927.3	1,043.7	1,086.7	1,046.8	13	—	(4)
% East Coast	51%	44%	38%	35%	—	—	—
RESIDUAL (millions of bbl.)							
New England	149.9	119.5	97.6	35.9	(76)	(70)	(63)
Middle Atlantic	286.6	240.0	200.9	101.6	(64)	(56)	(49)
South Atlantic	151.0	104.1	175.8	64.8	(57)	(65)	(63)
East Coast Total	587.5	463.6	474.3	202.3	(76)	(63)	(57)
U.S. Total	804.3	898.6	937.5	438.3	(46)	(51)	(53)
% East Coast	73%	52%	50%	46%	—	—	—
HEATING OIL'S CHANGING VISTAS							
Distillate Used							
For Space Heating	56%	47%	36%	34%	(31)	(28)	(9)
For Diesel Fuel	21%	26%	35%	39%	111	54	10
Residual Used							
For Heating	23%	17%	NC	NC	NC	NC	NC

(NC: Not Comparable because data bases were changed in 1979.)
(*) Gasoline data are for 1986, distillate and resid for 1985.

for space heating accounted for almost half of the industry's volume of 1.2-billion bbls. The bulk of this was in the Middle Atlantic and New England states. Today, residential space heating accounts for about one-third of that billion-barrel volume, with most of the loss in the East. Ironically, more distillate is consumed as diesel fuel now than for residential home heating needs. This is a trend that is expected to accelerate as the space heating market contracts further.

Similarly, residual demand exceeded 1-billion bbl. in 1979 while today it is significantly less than half of that. Environmental pressures to cleanse the air of sulfurs and other contaminants contributed heavily to residual's downfall as well as price rises that all but eliminated the economic advantages of heavy oils.

Accompanying these big-volume decreases in consumption were vast changes in retail and wholesale marketing of fuel oils. In the late '70s, distillate heating oil, for example, was distributed by thousands of small to medium-sized firms, many of them neighborhood and "Mom and Pops." The biggest one was Meenan Oil, which operated primarily in the greater New York area but did reach over into Pennsylvania. It was considered a "giant" for an independent because it had more than 100,000 retail customers.

Today, Meenan is outranked by Petro Heat & Power, of Stamford, Conn., whose retail volume is well above 250-million gal. year. Petro was the all-but-bankrupt firm that Irik Sevin used as his flagship for an acquisition program that was almost spellbinding. In three or four years, he has bought more than five dozen firms.

One that got by him was Chevron's sale of four substantial heating oil jobberships in Connecticut, New York, Pennsylvania and Maryland. This is where Champion Oil's Mahmoud Wahba slipped in and grabbed 80,000 household accounts, establishing himself as a force to be reckoned with from now on. Wahba went from 40-million gal. to 100-million overnight; currently he's past 120-million and shooting for 150-million—meaning he's in the market too for acquisitions in the lower New England and New York State arenas.

Meenan also has added many firms and much gallonage to its operations as did Whaleco, nominally a Brooklyn-based metropolitan area firm. Whaleco moved up into Connecticut and lower New England in recent years with the surprise purchase of the fuel oil assets of a retreating Ultramar America.

Ultramar was a saga in its own right. It bought Metropolitan Petroleum Corp. from Pittston Corp. in 1983 for $100-million and disclosed grandiose plans for a gasoline and fuel oil expansion in New England to utilize excess product from the Montreal refinery of its Canadian sister company. What went sour on the concept has never been disclosed but Ultramar suddenly sold off Metropolitan and all but faded from the retail scene.

Also pretty well memory book items are the "big three" of super-jobberships —Gibbs Oil, R.J. Sousa & Sons and Northeast Petroleum, then owned by the Kaneb Brothers. Gibbs sold off some of its assets and was renamed Astroline. Sousa, beset by family difficulties, sold off its retail assets to Getty. Northeast first went to Charter and is now owned by Cargill.

Atlantic Dry Holes

While all these land-based developments were continuing to reshape marketing on the East Coast, oil companies took a multi-billion plunge into the cold waters of the Atlantic itself.

Never really regarded as prime territory for exploration and development but promoted by the federal government as a probable treasure chest of oil and gas, the Atlantic waters from lower Newfoundland to the offshore reaches of Florida turned out to be virtually barren.

In all, 40 deep-water holes were drilled in the Baltimore Canyon off New Jersey and the Georges Bank off New England's famous Cape Cod. Only five had showings of oil or gas—not enough, however, to justify commercial development. All of the dry hole ventures cost the oil companies close to $3-billion before they finally gave up.

Of the various attempts to build refineries in the midlands and New England areas in recent years, probably the most disheartening was that of Pittston Corp., which tried for 10 years to get approval for a big facility at Eastport, Me. Environmentalists strewed everything from whales to bald eagles in its pathway. Many New Englanders avidly sought not only a refinery or two but federal crude oil storage depots to hedge against crippling shortages.

There were proposals for refinery construction in Hampton Roads, Va., the metropolitan Washington district, Baltimore, Md., and, of course, the upper New England area. All of these died on the vine; about the only one that made it from the ground up was a 44,000 b/d plant at Paulsboro, N.J. Amerada Hess spent a lot of money rehabilitating its old refinery at Port Reading, N.J., but then declining consumption and excess operable capacity almost everywhere literally forced this one back on the shelf again.

Divorcement Heartburns

Maryland, in 1980, passed one of the stiffest divorcement laws in the nation. It barred supplier ownership-operation of service stations, driving many of the brand names out of the state. Florida is in the throes of stiff divorcement laws now and Georgia retailers and jobbers alike have been trying to get something on the books there too. They've won their fights two or three times in the legislature but have been overruled by the courts and/or gubernatorial vetoes.

Looking Ahead

Is there any slowdown in sight for the East Coast marketplace? Well, consider, for instance, that Coastal Oil which owns the Belcher companies from Florida to New England only recently signalled that it wants to become a contender in the same area with its Derby brand [*NPN*—Feb. '87, p38].

It's looking to buy maybe 100 or so retail outlets a year. That's not a big movement. But—considering that Atlantic, Cumberland Farms, Getty and others like them are actively looking for service stations and that Petro, Meenan and Whaleco have their eyes open for fuel oil opportunities—the times ahead cannot be less than volatilely interesting. Another contender in the background at this moment could be Catamount Petroleum in the Boston area, which is owned by entrepreneur John Kaneb, former owner of Northeast Petroleum. He's back in business and quietly expanding staff and volumes.

Southland, the nation's biggest C-store chain, has been negotiating with Northville Industries, one of the biggest terminals in the East, for a possible tie-in which could eventually see Northville gasoline at 7-Eleven stores up and down the Coast.

Where's all this leading? It's anybody's guess, but one thing is certain: The marketplace is going to be anything but serene.

"As it is now," said one observer, "you almost have to have a box score program just to keep up with the changes that already have taken place. There's a whole new way of doing things in the making out there."

September 1987

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NPN

National Petroleum News

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The C-Store Market:

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People in the industry predict that convenience stores are heading for a shakeout similar to that of the gasoline stations in the late 1970's. **Page 38**

Express ay
Card
ish
See Instructio

The cast of players entering the automated fleet fueling business is growing rapidly and marketers have more choices than ever to consider. How does a marketer make the best decision for his company? **Page 46**

Southland Corp. takes aim at the automotive service business through the development of a 24-hour service facility in Dallas. Connected to a Chief Auto Parts store and adjacent to a 7-Eleven, company officials call it the "most convenient corner in America." **Page 52**

• TRENDS

Leaded Regular Begins To Lose Its Price Edge

The historic changes sweeping gasoline marketplaces these days are ushering in still another development—the day when leaded gasoline will cost more than unleaded regular at most stations. The probability is that leaded regular—if it can hang on at all—will be a specialty product, hard to find, and anywhere from 5¢ to 25¢ a gal. more than unleaded regular.

Leaded gasoline is already far down the path to extinction [*NPN*—Nov. '86, p44]. Leaded premium was abandoned long ago and with the introduction of mid-grades of unleaded and the elimination of leaded regular at many stations, the end is inevitable.

Traditionally, leaded regular has been used as the price leader in gasoline retailing. The old philosophy was to cut the pump price of the regular grade and make up for it by boosting premiums and superpremiums. That was OK so long as leaded regular dominated the sales ratios. But things have changed. Leaded regular sales are now down to 20% to 25% of the national volumes.

Field reports reveal a number of places where leaded regular has lost its price advantage completely vis à vis unleaded regular or any other grade. In Richmond, Va., for example (ironic, since it's headquarters for Ethyl Corp., once the biggest manufacturer of lead compounds for motor fuels), there are about a dozen service stations where leaded regular costs more than unleaded regular; and there are many others which do not sell leaded regular at all anymore. Some 7-Elevens in Memphis are now pricing unleaded regular at 5¢ a gal. below leaded regular. And in Houston, unleaded regular is being sold at 2¢-4¢ a gal. below leaded regular at some major brand stations—which has some independents wondering if the majors are trying to get rid of leaded regular all together.

Although many retailers are still following the old concept of using leaded as their price leader, the gap is expected to narrow over the next year or two. As recently as 1985, the differential between leaded regular and unleaded regular ran as high as 8¢ to 10¢ a gal. In 1986, it dropped to 7¢ a gal. for the nation as a whole. It started out at an average of 5.6¢ a gal. six months ago and by June, according to the Department of Commerce, had dropped to an average of 5.2¢. The probability is that this differential will be under 5¢ a gal. by next Dec. 31 and probably drift down to the 4¢ a gal. range by this time next year.

Then there's the EPA, which wants to wipe out all leaded gasoline by next Jan. 1. There are so many pro and con pressures involved in this issue, however, that it doesn't seem likely EPA will implement its phaseout on schedule.

Meantime, here's an overview of narrowing gap between leaded regular and unleaded regular prices:

U.S. City Retail Averages
(cents per gal., taxes included)

Year/ Average	Leaded Regular	Unleaded Regular	Price Differential
1987			
January	80.6¢	86.2¢	5.6¢
February	84.8	90.5	5.7
March	85.5	91.2	5.6
April	87.9	93.4	5.5
May	88.8	94.1	5.3
June	90.6	95.8	5.2
1986	85.7	92.7	7.0
1985	111.5	120.2	8.7
1984	112.9	121.2	8.3
1983	115.7	124.1	8.4
1982	122.2	129.6	7.4
1981	131.1	137.8	6.7
1980	119.1	124.5	5.4

—*J. Richard Shaner*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

JUNE	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$0.966	$0.906	$0.958	$1.098
Regions:				
Northeast	0.975	0.903	0.948	1.094
North Central	0.967	0.925	0.966	1.100
South	0.961	0.890	0.951	1.094
West	0.964	0.908	0.966	1.109

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	7/31/87	8/1/86
Gasoline (total)	229,735	222,596
Gasoline (Unleaded)*	135,762	116,356
Jet Kerosine	40,167	32,139
Distillates	114,252	116,561
Residual	41,863	39,693

**Included in gasoline total.*

Source: American Petroleum Institute.

NPN

NATIONAL PETROLEUM NEWS SEPTEMBER 1987

Higher Crude Prices Rejuvenate Upstream Nets, Hurt Downstream

In the wake of the most traumatic collapse of crude prices in oil's history, there were signs in the second-quarter earnings reports that normally may be rounding the corner again.

Upstream profits were buoyed by the fact that domestic and international crude oil prices were edging upwards to the $20 bbl. level. Conversely, this impacted in reverse fashion on marketing nets. As might be expected, they tightened up and, in some cases, declined. It must be remembered, however, that in the second quarter of last year, crude prices plummeted while downstream profits boiled upwards due to the time lags in the changes.

Exxon, Texaco, Chevron, Shell, Amoco, Arco and Unocal were among the bigger oil companies posting profit increases in the second quarter. Mobil, Tenneco, Conoco, Phillips, Sun and Ashland, on the other hand, had minus signs ranging from 10% to 62%.

Downstream was a different story. Shell, the nation's leading gasoline marketer, was the only major with a greater downstream net in second quarter 1987 than its competitors. Amerada Hess, among the second tier companies, also had a substantial increase in the second quarter vis à vis the same period of last year.

For the six months of 1987, however, the pickin's were slim. The depressed first-quarter nets pulled down the first-half earnings so that only a few had plus signs, notably Arco, Unocal and Kerr-McGee.

Upstream Nets, Continued . . .

Amoco was a thin-edge winner too, with just enough to get over the line.

One Wall Street analyst put his finger right on the button with this comment: "The second quarter of 1987 was a mirror image of the second quarter of 1986. Last year upstream earnings were terrible while downstream profits were extraordinarily good." The industry is in transition now, he added. "It's moving back to higher levels of profitability from the disaster of last year."

Shell president John Bookout had this comment: "Improvement in crude oil prices, chemical margins and sales volumes, more than offset the effect of depressed refined products margins and lower natural gas prices."

The general feeling seemed to be that with gasoline consumption up noticeably this summer and pump prices back at the buck-a-gallon average that the outlook for the third quarter is about the rosiest it has been since 1985. **N:N**

SECOND-QUARTER AND FIRST-HALF EARNINGS
Upstream Profits—The Outlook Is Rosier

(Add 000,000)

Company	2nd Qtr. 1987	2nd Qtr. 1986	% Chng.	1st Half 1987	1st Half 1986	% Chng.
Exxon	$1,150.0	$1,115.0	3.1	$2,220.0	$2,825.0	(21.4)
Mobil	304.0	582.0	(47.8)	556.0	1,022.0	(45.6)
Texaco	240.0	185.0	29.7	358.0	513.0	(30.2)
Chevron	344.0	216.0	59.3	542.0	593.0	(8.6)
Shell	266.0	219.0	21.5	374.0	495.0	(24.4)
Amoco	311.0	238.0	30.7	571.0	569.0	0.4
Arco	330.0	150.0	120.0	569.0	449.0	26.7
Tenneco	46.0	80.0	(42.5)	75.0	204.0	(63.2)
Conoco*	64.0	135.0	[illegible]	[illegible]	[illegible]	[illegible]
Phillips	3.0	8.0	[illegible]	[illegible]	[illegible]	[illegible]
Sun	90.0	100.0	[illegible]	[illegible]	[illegible]	[illegible]
Unocal	62.0	34.6	[illegible]	[illegible]	[illegible]	[illegible]
Marathon*	218.0	163.0	[illegible]	[illegible]	[illegible]	[illegible]
Amerada Hess	89.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ashland**	40.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pennzoil	7.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kerr-McGee	27.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Murphy	7.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Amer. Petrofina	28.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Downstream Nets—N[illegible] Div[illegible] body

Exxon						
Domestic	(19.0)	[illegible]	[illegible]	(57.0)	357.0	—
Foreign	[illegible]	[illegible]	[illegible]	112.0	809.0	(86.2)
Mobil						
Domestic	[illegible]	[illegible]	[illegible]	19.0	220.0	(91.4)
Foreign	[illegible]	[illegible]	[illegible]	[illegible]	497.0	(71.2)
[illegible]						
Domestic	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Foreign	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]						
Domestic	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Foreign	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Why the C-Store Image Race Could Lead to a 'Shakeout'

While its explosive growth for the moment remains unchecked, the convenience food store industry could be headed toward the kind of fallout and shrinkage that hit the gasoline service station business in the late 1970s and early 1980s. That's how a number of both "store" and "gasoline" people see the market shaping up.

Many major oil companies which once shunned c-stores are now heavily involved in the market. One industry survey shows eight majors currently rank among the top 50 chains in number of stores. Amoco, for instance, ranks 20th, with an estimated 480 "Food Shop" stores. Shell reportedly has about 300 "Food Marts" of 1,200 sq. ft. or more plus other smaller units. Although it doesn't rank among the top 50, Phillips has between 100 and 150 stores, which require an average investment of $550,000 to $600,000, not including land.

A relentless, and expensive, drive by many chains to improve the image of their stores—by building new and fancier ones, sprucing up older ones and cutting store merchandise prices—is putting much pressure on the "typical" C-store of the past.

Some recent trends causing particular concern include:

- Price cutting. Some large C-store chains have been slashing their "in-store" prices recently, dragging down their traditionally high in-store markups.
- Overbuilding. Both the total number of C-stores and those selling gasoline have more than doubled since 1981. Many now talk of there being "too many C-stores," just as was once said of service stations before the shakeout hit them.
- Shrinking marketshare. One estimate puts annual C-store sales now at $65.9-billion, up 7% from 1986, with gasoline sales accounting for $27-billion of the total. However, the rapid increase in store numbers is squeezing per-store sales averages.
- Soaring investments. Some C-store chains and large oil companies say they are now investing from $500,000 to over $1-million in their new stores. Millions of dollars are being spent on remodeling and sprucing up older units. Meanwhile, many are spending more on fast food equipment and expanding their in-store merchandise.
- Rising oil company involvement. Eight oil companies now rank among the top 50 chains in number of stores. Of 10 major oil companies checked recently, all reported they are currently building C-stores and/or converting service stations into stores.

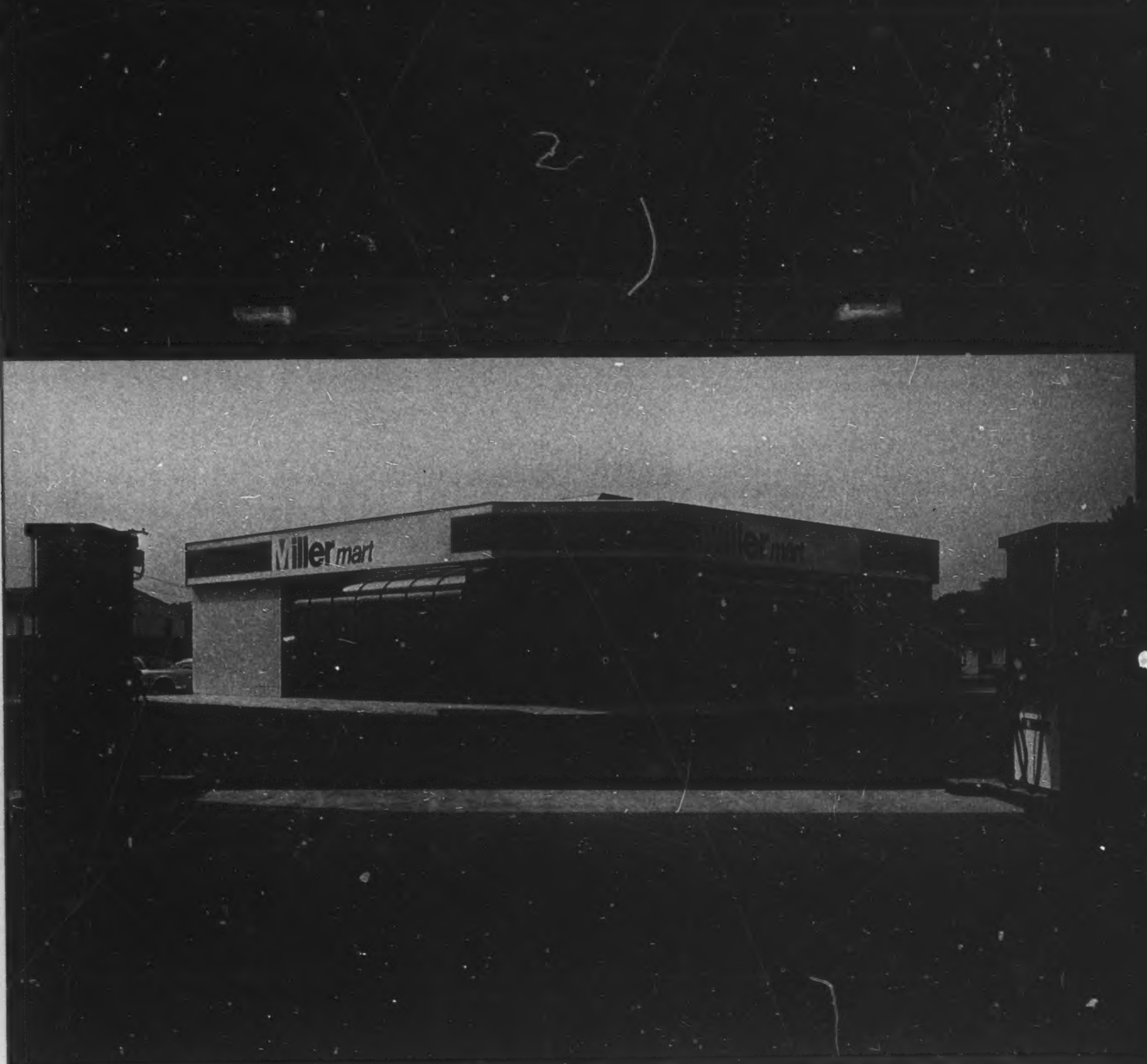
Wanted: A Better Image

For years, most consumers have looked on C-stores as usually convenient but high-priced little stores, except for gasoline. They were often found on secondary side street locations, had cluttered and cramped merchandise displays and were often simply dirty.

Some larger store chains, including those owned by gasoline marketers, are trying to change this image by building newer and brighter stores on well-lighted prime sites, upgrading their in-store appearances and offering deli-type fast foods.

They're also cutting prices and this, in particular, has been sending a few shock waves through both the C-store and gasoline industries.

Southland Corp. last year began slashing prices on selected items almost to cost at its 7-Eleven stores in some Southwest and Southeast markets. Southland has backed this up with advertising and



promotion campaigns that boast of having the lowest prices in markets where they have taken such action.

Some other large store chains, such as Circle K and National Convenience Stores, have been trying to compete with the 7-Eleven price-cutting.

Some major oil companies, meanwhile, are believed in some cases to have had trouble getting their spanking new (and very expensive) C-stores to meet targeted projections. They have been, in some markets, adding fuel to the chains' price-cutting fire with "promotions like we had in the Sixties at 'gas' stations," says one marketer.

'Gutsy' Prices

The 7-Eleven price reductions seemed to center around such items as beer, cigarettes, milk and soft drinks—categories which have been subject to some price-cutting before at C-stores.

In Dallas recently, 7-Eleven stores were selling two-liter bottles of soda for $1.29, compared with an average price of about $1.80, and a 12-pack of beer for $5.79, about 36¢ below average prices. In Shreveport, La., it had television commercials describing its low beer prices as "gutsy."

Circle K Corp. met Southland's price cuts for a while in highly competitive markets like Florida but then backed off some. Robert Reade, Circle K president, was later quoted as saying that in December his company discontinued trying to meet all competitive in-store price cutting because "it looked like we were all going down the same rat hole."

National Convenience Stores has said it is matching some 7-Eleven prices in Houston.

Southland admits that it has "expanded (our) competitive pricing strategy," and has "accelerated" investments in marketing programs and store remodeling. Its chief executives say the company's 8,200 7-Elevens and other retail stores are moving "aggressively" to "meet the challenges of an increasingly competitive retailing environment."

One Southland executive is quoted as saying 7-Eleven's price-cutting on some store items is part of a strategy to make the stores stand out and attract a wider range of customers. Southland, for one thing, hopes to draw more female customers to its stores. At present, just 30% of 7-Eleven customers are women.

Other large store chains like Circle K and NCS talk of the need to draw more women customers, too, but think there are other ways besides price-cutting to do this, such as brighter stores and more products that women need. NCS's Stop N Go stores in

New looks, new products and 'gutsy' prices

Houston have added such things as bottled water, greeting cards, and different brands of cosmetics to their shelves.

V. H. Van Horn, NCS president and chief executive, has been quoted as saying he believes "the working woman is attracted to convenience stores for the same reason the working man is, and that's to save time."

Some oil companies, meanwhile, appear to be rolling out heavier promotions of their multiple pump C-stores, with some of these taking on the characteristics of all the hoopla once used for "grand openings" of service stations.

In Memphis recently, a Texaco "Food Mart" had a $10,000 display of Cokes as part of a "grand opening" promotion, says independent oil marketer Jack Malone of that city. "I hadn't seen anything like it since the Sixties," he said. "The oil companies here are now trying any promotion to get their units to meet their projections."

This Grand Central Station outlet which recently opened in Green Bay, Wisc. is an example of the stress some marketers are putting on large, attractive innovatively designed—and highly expensive—stores. The 6,500 sq. ft. store (on a 2½-acre site) is owned by Petroleum Equipment Service Co., Green Bay, which offers petroleum marketing products.

Low Markup, High Volume

Some "gasoline" and "C-store" people have had their pricing misunderstandings ever since the idea of adding self-serve pumps at C-stores began catching on in the early 1970s.

In general, however, those with such facilities have usually followed the "low markup, high volume" strategy at their pump islands while adopting just the opposite approach on inside store sales. Non-gasoline margins at C-stores in 1985 averaged 32.2% while gasoline margins averaged just 7.3%, according to the National Assn. of Convenience Stores.

This compares with overall average markups in the 20-22% range at supermarkets, says Larry Dillard, vice president of Musket Corp. (Love's Country Stores), Oklahoma City, who came out of the supermarket field. He doubts some reports that Southland intends to compete head-on with supermarkets on price.

Circle K's Reade has been quoted elsewhere as saying his company's store prices exceed grocery-store prices by about 10% to 15% now, down from higher margins a few years ago.

Most owners and operators can't see their C-stores ever competing with supermarket prices on anything but a few selected items. "There is no way most C-stores can get the volume of business necessary to compete with a supermarket on price," says one marketer.

Some independent oil marketers have been more aggressive on their "in-store" prices all along than most large C-store chains. Pilot Oil of Knoxville, Tenn., for example, shoots for an average markup of 27.5% at its expensive interstate locations and even less at neighborhood-type stores.

One independent not in C-stores in the Southeast was, nevertheless, recently mapping plans to strike back at some C-store price-cutting in his market. He was planning to sell 16-oz. Cokes at 29¢, 6¢ below what some stores were selling

Revitalized Charter Sells Asphalt, Buys More C-Stores

Charter Co., which recently restructured itself out of Chapter 11 bankruptcy proceedings, has expanded its C-store operations by 150 units and spun off its asphalt operations on the East Cost and the Midwest.

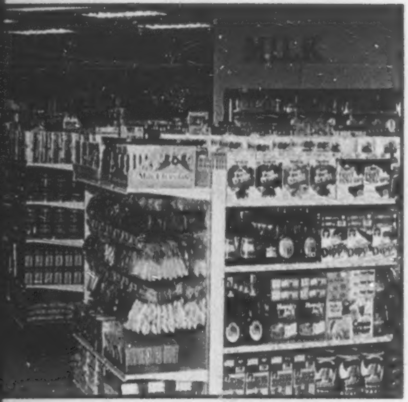
"It's all part of our projected one-step-at-a-time return to normalcy," a spokesman said. "This is our first addition since we got ourselves out of Chapter 11 recently."

Charter, subject to closing no later than Sept. 30, has purchased all of the stock of Mr. B's Oil Co., Windber, Ga., for approximately $7.5-million. The chain has 150 stores, all with gasoline and virtually all within the Georgia borders. They are company owned and leased.

Charter, at the same time, signed an agreement in principle to sell its Riffe Petroleum Co, for approximately $42-million plus an amount equal to the company's working capital, to Elf Acquitaine Asphalt, Inc., one of the U.S. subsidiaries of the French Elf Aquitaine Group.

Sale of the asphalt business takes Charter out of the processing end of the business entirely. It previously sold its refinery in Houston and bowed out of its half-interest in another in the Bahamas in restructuring itself. Riffe Petroleum had 14 emulsion plants on the East Coast and in the Midwest.

What Charter has left are its string of 400 or so C-stores and service stations on the East Coast, its heavy oil marketing operations in the Northeast, and a 24% interest in some oil production in Adu Dhabi in the Middle East. Although specific numbers were not immediately available, the Mr. B's additions increase the number of C-stores to about 650. Charter's spokesman said gasoline volumes were not available at this time.



Grand Central Station store has clean, highly visible departments.

Some chains, including those of gasoline marketers, are spending more on equipment for fast food and deli offerings.

them for. "I'll make 1.5¢ on them and I plan to sell a lot of cigarettes at a minimum markup," he said.

Most independent chain retailers, however, have been content to go along with the relatively high markups on store items that have long characterized the C-store industry. However, many of these marketers have voiced concern in the past about the general "low" image consumers have of C-stores, and can be expected to join any price-cutting that breaks out near their units.

While the typical convenience food store has had a bad "in-store" price image among consumers for a long time, most have been extremely competitive at their self-serve gasoline pumps.

"They (multiple pump C-stores) have already given away whatever profit there once was in gasoline," says one marketer. "If they get into price-cutting inside the stores now, there won't be much left."

Soaring Population

If widescale in-store price-cutting should break out, it couldn't come at a worse time for C-store owners and operators. There has been a phenomenal growth in the number of stores in the past few years, and many markets are now described as "over-saturated."

In their search for a better image, most chains are building brighter, fancier and much more expensive stores than previously. Some oil marketers now in C-stores say they see a distinct parallel between the present growth of the stores with that of service stations in the 1960s. Many think a shakeout of the stores is inevitable, much like the one that hit the stations earlier.

The oil industry's service station population peaked in 1972 when there were 226,500 stations. By the end of this year, according to NPN Fact Book sources, there will be only 117,000 service stations left which derive more than 50% of their income from the sale of gasoline and oil products.

The number of C-stores, however, with their self-serve gasoline pumps has been climbing about as fast as the station number has been dropping.

At the end of 1981, there were only 38,000 C-stores and only 16,416 of these were selling gasoline, according to the National Assn. of Convenience Stores (NACS).

Just four years later, at the end of 1985, NACS reported its total store count had reached 61,000, with 55% or 33,500 equipped with self-serve pumps. A trade publication, *Convenience Store News*, estimates much higher numbers at the end of last year—76,000 stores with 53,000 selling gasoline.

Whatever the actual store counts today, all sources agree that the small stores have been growing by leaps and bounds, reinforcing the idea of a similarity between service station growth in the 1950s and 1960s, and C-stores today.

"You wonder what it's all going to lead to," says Jim Fri, a Phillips-branded jobber in Memphis.

Soaring Investments

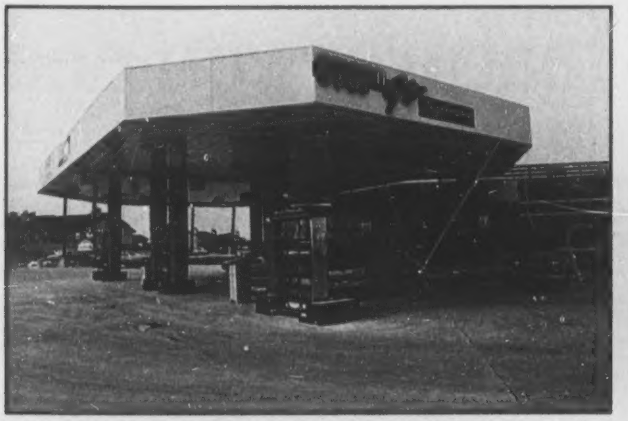
Almost all large C-store chains, including those owned and operated by independent gasoline marketers, continue to spend heavily on modernizing and sprucing up their stores. They are also increasingly moving to prime locations for their newer stores as they close or sell off older ones.

Southland Corp. says a "majority" of the $561.7-million it spent last year for "convenience retailing" went into "new stores, remodeling and support of our

One-Third of the Top Stores Are Oil Companies

Rank	Company	Key Chains	No. Of Stores	No. With Gasoline
1	Southland, Dallas	7-Eleven, Highs	8,200	3,594
2	Circle K, Phoenix	Circle K	3,500	2,399
3	CFMI, Rosemont, Ill.	Convenient Food Mart	1,400	560
4	Dairy Mart, Enfield, Conn.	Dairy Mart, Lawsons	1,207	407
5	Cumberland Farms, Canton, Mass.	Cumberland Farms	1,205	700
6	Silcorp, Mississauga, Can.	Mac's Hop-In	1,042	225
7	Nat'l Conven. Stores, Houston	Stop N Go	950	720
8	Texaco, Houston	Food Mart	900	900
9	Dillon Cos., Hutchinson, Kan.	Time Saver, Kwik Shop, Mini Mart	853	687
10	Mobil, Fairfax, Va.	Mobil Mart	800	800
11	Munford, Atlanta	Majik Mart	792	448
12	Becker Milk, Scarborough, Can.	Becker's, Shaw's	750	30
13	Kampgrounds, Billings, Mont.	KOA	675	122
14	Chevron, San Francisco	Food Mart	600	600
15	Casey's Stores, Des Moines	Casey's Gen. Stores	586	586
16	Arco, Los Angeles	am/pm Mini Market	550	544
17	Sun Co., Radnor, Pa.	Stop-N-Go Sunoco Food Market	505	298
18	Dia. Shamrock, San Antonio	Diamond Shamrock	500	500
19	Crown Central, Baltimore	Fast Fare Zippy Mart	485	437
20	Amoco, Chicago	Food Shop	480	480
21	Conoco, Englewood, Colo.	Jet Store	469	469
22	The Pantry, Sanford, N.C.	The Pantry	462	432
23	Tenneco, Houston	Tenneco	450	450
24	Provigo, Laval, Can.	Provi-Soir Red Rooster	447	229
25	Emro Marketing, Springfield, Oh.	Starvin' Marvin, Gastown, Bonded	445	445
"	Coastal, Houston	Joy Food Store, Sunshine Food Store, Derby One-Stop	445	445
27	Ashland Oil, Bloomington, Minn.	Super-America	430	430
28	JFM, Jackson, Miss.	Jr. Food Mart	407	404
29	Charter, Jacksonville, Fla.	Charter Food Stores	401	401
30	Total Petroleum, Denver	Total, Vickers, Best	400	400
31	Wawa, Wawa, Pa.	Wawa	375	82
32	White Hen Pantry, Elmhurst, Ill.	White Hen Pantry	340	0
33	Sunshine-Jr., Panama City, Fla.	Jr. Food Store	336	325
34	Huntley's Jiffy Stores, Palatka, Fla.	Jiffy Store	325	302
35	Shell, Houston	Food Mart	300	300
36	Allsups, Clovis, N.M.	Allsups	287	287
37	Mapco, Tulsa	Delta	283	283
38	Farm Stores, Miami	Farm Store	270	107
39	Getty Petroleum, Jericho, N.Y.	Getty Mart	269	269
40	Atlantic Refining, King of Prussia, Pa.	A-Plus	260	260
41	Oshawa Group, Toronto, Can.	Jug City, Boni Soir	251	0
42	Exxon, New York City	Exxon Shop	250	250
"	Dairy Stores, Edison, N.J.	Krauszer's	250	3
44	QuikTrip, Tulsa	QuikTrip	246	246
"	E-Z Mart, Texarkana, Tex.	E-Z Mart	246	243
46	Uni-Marts, State College, Pa.	Uni-Mart	228	118
47	Holiday Station Stores Minneapolis, Minn.	Holiday	218	218
48	Lil' Champ, Jacksonville, Fla.	Lil' Champ	210	80
"	United Dairy Farmers, Norwood, Oh.	United Dairy Farmers	210	94
50	Tom Thumb, Hastings, Minn.	Tom Thumb	196	90

Source: Convenience Store News, Aug. 2, 1987.



Women are being courted by C-store operators. NCS's Stop N Go outlets are putting more emphasis on bright, more visually appealing stores and adding woman oriented products.

Marketers are putting more stress on putting locating their C-store outlets on busy, well lighted thoroughfares instead of secondary streets.

marketing program." The company spent $175-million just to remodel stores and add video cassette kiosks and other services.

Circle K president Reade has told the trade press that his company now looks for four-corner intersection sites with at least one street having a minimum 20,000-car daily volume of traffic. He says his company has to compete with the likes of "McDonald's, Jack-in-the-Box, and Arco" for such locations, and now pays an average of about $200,000 for a store site.

Independent gasoline marketers with store chains are also making heavy per-store investments.

Truman Arnold of Texarkana, Texas, who owns and operates a chain of about 100 Road Runner multiple pump C-stores, says a typical investment for one of these units is $430,000. Pilot Oil of Knoxville, Tenn., spends from $200,000 to $300,000 for land and another $400,000 to $500,000 for improvements at its interstate locations. Tom Love of Musket Corp., Oklahoma City, has said some of his interstate store units run over $1-million.

Some independent gasoline marketers, however, are becoming more cautious about making huge investments in large stores.

Bill Williams, president and chief executive of Vista Marketing Group, Rockford, Ill., says he is thinking in terms of 1,000 to 1,100 sq. ft. instead of 3,000 sq. ft. stores in the future due to his concern about store saturation and what this could lead to.

"Many of us (gasoline marketers) got into C-stores because of the high margins they offered compared to our bad gasoline margins," he says. "Now we are seeing the store margins go bad because of over-saturation."

The Herd Instinct

Most of the big growth in multiple pump C-stores until recently has occurred primarily in the C-store, independent oil marketer, and branded oil jobber segments. The majority of oil refiner/suppliers were slow to join in all the building. This is changing.

In a recent survey, *Convenience Store News* found that eight refiner/supplier oil companies (Texaco, Mobil, Chevron, Amoco, Coastal, Shell, Mapco, and Exxon) appeared in its "Top 50" ranking of C-store operators for the first time (see chart).

"The elephants are all following the herd instinct," says one marketer, "just like they did when they were putting a three-bay service station on every street corner in America."

A survey of a dozen major oil companies by *NPN* reveals that all now have more company-operated or dealer-operated stores than a year ago and all are building more. (Note: Some numbers obtained directly from the companies differ from those in the *Convenience Store News* chart).

Texaco, a company which just a few years ago didn't want even its jobbers or dealers to get involved in C-stores, now has 900 of its "Food Mart" stores in operation. Only seven C-store chains rank ahead of Texaco in the total number of stores today.

The Texaco Food Mart stores average in size 24 by 44 ft., and in addition to typical C-store items have a limited fast food line of fountain drinks, hot dogs, and coffee. They have an average of 24 gasoline hoses and, according to a company spokesman, have monthly averages of $25,000 in-store merchandise and 150,000 gal. in gasoline sales. The company declines to reveal investment details.

Mobil is second among the oil companies in number of C-stores with 600 of its "Mobil Marts." Most of these units are 650 sq. ft. and sell primarily sodas, bread, milk, ice, cigarettes, prepackaged snack foods, sandwiches, candies and other sundry items. A few sell nachos, hot dogs, and fountain drinks.

Arco's am/pm mini market program still appears to be one of the best among the oil companies. There are now 550 such stores ranging in size from 1,600 to 2,500 sq. ft. These units are moving into self-serve fast foods—cooking hamburgers on the premises, hot dogs, carryout yogurt, soft-serve ice cream, fountain drinks, snacks, beer and wine.

Arco says some of its units in Las Vegas cost as much as $1-million. Overall, the am/pm stores average 175,000 gal. in monthly gasoline sales, and last year's merchandise sales for all the stores totaled $240-million. Arco thinks they will reach $300-million this year.

Chevron is third among the majors in total stores. It now has about 600 company-owned food stores. The typical size is 800 to 900 sq. ft. stores with 24 to 30 self-serve gasoline hoses. A company spokesman says investment in reconstructed or new facilities range from $750,000 to $1.2-million.

Unocal East says it now has 93 "Self-Serve Marts" ranging in size from 600 to 2,000 sq. ft. The company says its jobbers have over 3,000 C-stores and adds that it is "very optimistic" about the future for stores. The company projects building from three to five 2,000 sq. ft. stores this year.

Phillips Petroleum now has between 100 and 125 company-operated stores representing average investments of $550,000 to $600,000, excluding land. Its standard unit, a center island marketer, is about 750 to 800 sq. ft. but it has some "Food Plaza" units as large as 2,400 sq. ft. Charles Bowerman, marketing vice president, says Phillips jobbers who wish to participate in the company's new construction incentive program must have a C-store in their new construction plans. As for the company's own future building plans, it wants to build about 20 to 30 company-operated units per year in metropolitan markets—each with a C-store and four to six multiple pump dispensers.

An Amoco spokesman puts that company's current store total at 460 with approximately 100 of these company-operated. Named "Food Shop," the Amoco stores average 20 by 44 sq. ft. with 24 hoses but the company has a few which are 24 by 44 sq. ft. and is seriously studying the possibility of building some 30 by 50 sq. ft. stores. A Food Shop opened in Kansas City a few months back, dubbed Amoco's "station of the future," measures 1,056 sq. ft. "I wasn't impressed with it," says an independent. "It's too small for all the stuff they tried to cram in it." The company spokesman says Amoco sees a "generally positive future for C-store development" although some markets are reaching "their peaks."

Shell, while declining to reveal much about its C-store operations, reportedly has 300 "Food Marts" of 1200 sq. ft. or more, plus quite a few smaller "mini-marts." The company declines, also, to reveal gasoline or store sales volumes but says the units sell four to five times more gasoline than food. "We are primarily in the business of selling gasoline."

Exxon now has 250 of its "Exxon Shop" stores in 20 states. These are 1,100 sq. ft. units with an average of 18 hoses. They carry a narrow product line.

Sohio says it has 120 company-operated stores with "no given name." They average 1,200 sq. ft. in size and carry a limited line of snacks, cigarettes, soft drinks and fast foods. The company sees "moderate growth" in C-stores and "continues to look for locations."

C-stores vs TBA

Many of the larger oil companies now seem to be opting for multiple pump C-stores at prime locations where they previously had automotive repair-type service stations. In certain instances, some dealers complain, they have to give up good service bay operations to make room for the stores.

A a major company dealer in a hot Florida market, says that a year ago he had a traditional three-bay service station that was grossing $45,000 to $50,000 per month in automotive service work. He wanted to keep the station the way it was but the company he was leasing it from wanted to convert it into a C-store with self-serve gasoline pumps. The company persisted and had its way.

Today, says the dealer, he's pumping 250,000 to 260,000 gal. per month at his self-serve pumps but sales inside the "new" C-store are "very small."

Gasoline gallonage like that, of course, is the big attraction for the oil company.

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The average non-gasoline margin at C-stores was 32.2% in 1985, says NACS, but large chains and independents alike have slashed in-store prices aiming at a 25% or lower mark-up to draw more customers.

Book Tips Marketers on How To Strike it Rich at Outlets

The way Al Kerth sees things, there are dozens of ways out there that service station operators can improve their bottom lines and generate a lot more traffic at their facilities.

The same holds true for fuel oil retailers and other small, up-front type of product marketing. All it takes is imagination and implementation of the concepts that fit each place best, he says.

Kerth—officially, Albert L. Kerth, A.I.A.—is an architect by profession who has devoted most of his life to designing and building service stations. He spent 38 years in the engineering and marketing department of the old Getty Refining & Marketing Co. before setting up shop as a consultant and expert witness for government and industry.

He wrote two editions of "A New Life for Abandoned Service Stations," both of which won high praise and considerable implementation in gasoline marketing. His latest effort is entitled, "40 Profitable Ideas for Service Stations."

He believes that "the days of surviving on gasoline only for petroleum marketers have passed. He states further:

"Gasoline must be combined with multiple business uses that will generate income to cover operating expenses and inflation and then provide an adequate return. Three or four profit centers should be included in future planning by marketers and independents.

"Careful site selection and demographic studies must be completed before the expensive multi-business venture can succeed. Combining a fast lube with a tune-up center, an eight-bay self-serve car wash, gasoline and a convenience store, as was done in Denver, is an excellent example of multiple business uses.

"An independent who developed a brushless tunnel wash, and included a five-bay car detail shop and a 'gas bar' in two Oklahoma cities is a firm believer in developing good properties with multiple business uses."

Kerth's new book includes a variety of suggestions for using boarded-up service bays. These include self-service wand car washes, discount pet food stores, bicycle sales and repairs, donut stores, pizza parlors and video stores, all combined with gasoline operations.

Substantial profits can be realized when a food mart is placed on one of the islands for full-service or self-service customers or becomes a free-standing building adjacent to a full-service facility, he says. The advantage of a food mart is the profit that can be realized by the better-than-average service station, explaining:

"A 960-square foot building that sells hot coffee, donuts, frankfurters, soda, milk, candy, cigarettes, newspapers and a variety of products can make a profit from the gross sales that range between $15,000 and $30,000 a month."

Other Kerth suggestions include self-service postal centers, copy machines, ice cream machines and even seasonal produce such as strawberries, peaches, tomatoes, etc. When crops are abundant, all can be good money makers.

Kerth's fascinating new book can be obtained from Petroleum Marketing Education Foundation in Alexandria, Va. (P. O. Box 20001, Zip 22320) at $35 per copy for contributors and $39.50 for non-contributors. Some buyers have said it's worth 10 times that much.

October 1987

$5.00

Bulk Plants Hit With OSHA Benzene Regs

Emerging Trends in Gasoline Composition

How King Oil Competes in Kansas City

NPN

National Petroleum News

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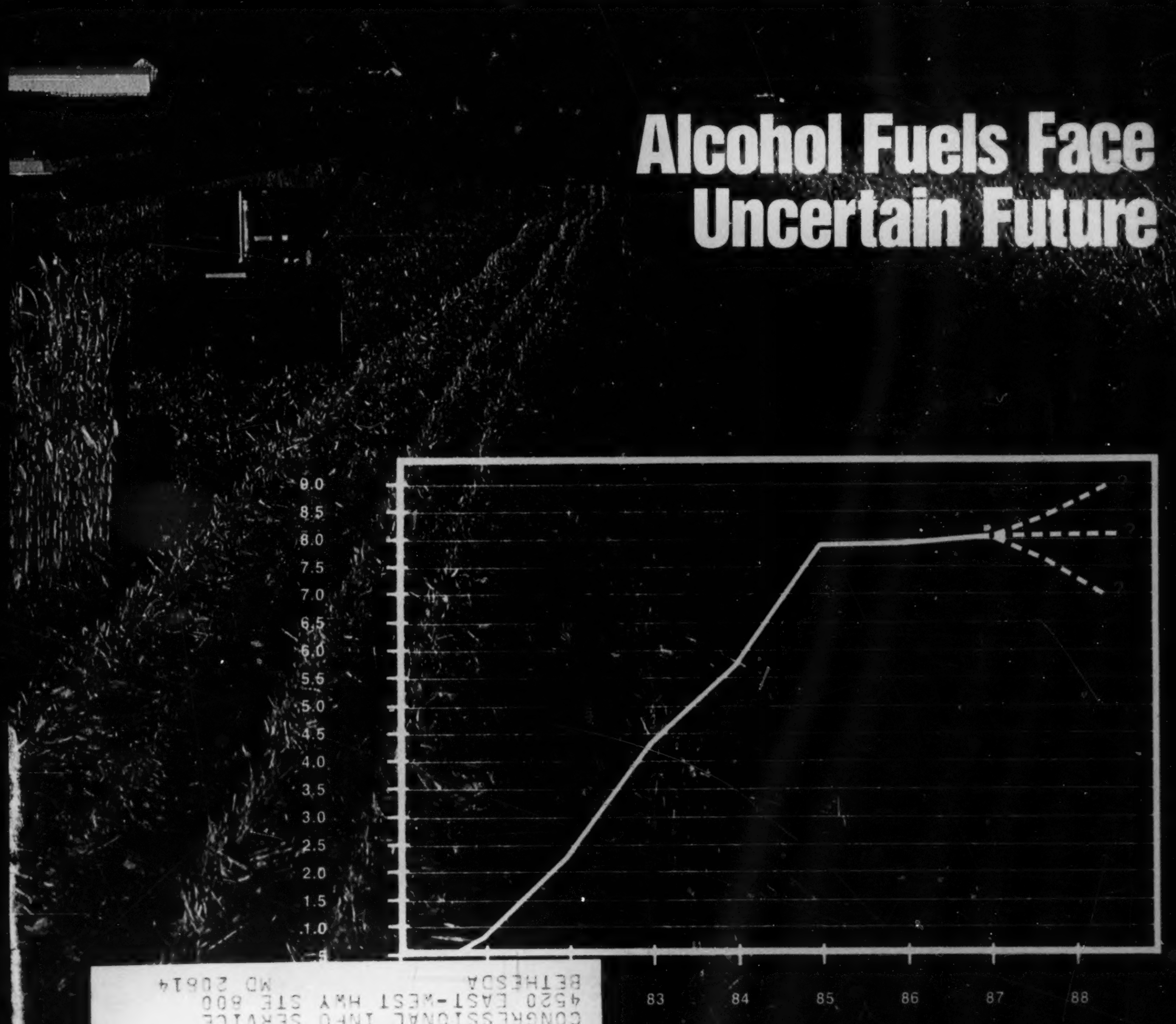
Alcohol Fuels Face Uncertain Future



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Looking Things Over

Beginning this month, Frank Victoria becomes *NPN*'s Editor-in-Chief. I am stepping aside to pursue other things, including professional loafing. I will, from time to time, continue to make occasional contributions to *NPN* but Frank will in the future come to you each month on this page.

Frank has a good background to take over the future direction of *NPN*. He is an ex-editor of Service Station Management, a sister publication of *NPN* in the Hunter Publishing Co. stable. In addition, he has served as *NPN*'s Managing Editor for the past several months, preparing him for his new assignment.

Frank finds the petroleum marketing industry a complex but exciting field for a professional journalist to cover. As the 78-year-old magazine's sixth Editor, Frank hopes to continue its enviable reputation of being "the oil marketer's bible" by serving marketer readers with factual and interpretative information each month about significant trends and developments in their industry.

The industry that *NPN* will be covering in the future under Frank's direction should be an exciting one.

It has, since all the upheaval and change of the 1970s, become a much smaller but far more efficient industry. The old "incremental barrel" theory of running refineries and everything else wide open has given way to a new era of oil companies trying to tailor refinery production to market demand. Marketers, meanwhile, are concentrating on fewer but higher-volume units and searching for more and more "tie-ins."

Some marketers say they miss all the excitement of the wild and wooly days of the pre-1970s, and add that the industry isn't as much "fun" as it once was. Others say it is a more exhilarating industry than ever. It is a more risky business nowadays but the profit opportunities might be better, too.

Whatever trends the industry takes, Frank and his crew will be reporting and interpreting them for you. *—Marvin Reid*

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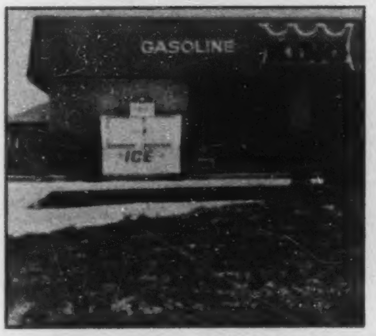
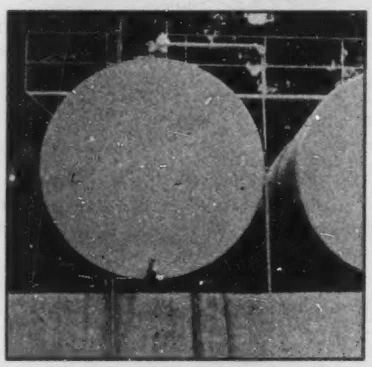
Good old-fashioned "gasohol" is caught up in a contentious struggle in the motor fuel marketplaces to gain more market share. But industry sources and government can't agree on its benefits, market volume or future. **Page 38**



King Oil Co. has carved out a healthy niche in the tough Kansas City market. Their strategy: Build and operate convenience stores that sell gasoline, not vice versa. **Page 52**



Petroleum retailers may be exempt from OSHA's new benzene regs, but bulk plant operators could face major expenses if required to install vapor recovery equipment. **Page 56**

• TRENDS

Cross Your Fingers: Fall Could Be Tricky

Some red flags had already been flapping a warning about crude oil and gasoline prices long before the Labor Day weekend came and went. Now, there is even more reason to wonder whether the last quarter of this year may turn out to be somewhat more troublesome than had originally been anticipated in earlier forecasts.

For example, the initial overall scenario began to show signs of falling apart in August after the slow but steady growth upwards from last year's disastrous collapse of crude oil and product prices. In fact, the short term outlook was for the most part expected to be rather bland. However, the late summer harbingers could not accurately be described as fully supportive of this unexciting outlook.

Wholesale prices for unleaded gasoline (for all types and services) eroded by almost 5¢ a gal. between the beginning and the end of August. Retail prices were down about 1.5¢ a gal. at the same time. Consumption, which should have been higher, inasmuch as August is a peak driving month, stayed at about the same level as it had been in June and July. In other words, no gain. Gasoline imports boomed along at the 550,000-to-600,000 b/d level while stocks remained on the high side—at 228-million bbl., about 14-million to 15-million bbl. higher than last year.

Wholesale gasoline prices at the end of August were just a shade under 55¢ a gal. Pump prices for unleaded—again the all-grades, all-services averages—dropped to 98¢ a gal. This was not a helpful figure when it is recalled that gasoline prices had been expected to top the $1 a gal. mark in the third quarter of this year and drop 1¢ to 99¢ a gal. in the fourth quarter. With July averages of 99¢ and August of 98¢, September would have to exceed $1.03 gal. to make the prediction of $1 a gal. come true for the third quarter. But there's not much chance that could happen—barring, of course, any unforeseen disruptions created by Persian Gulf entanglements.

That would put a small damper on the fourth quarter forecast of 99¢ a gal. and perhaps carry over into the first quarter of 1988, which was also scheduled to look like 99¢ a gal. The fall and early winter weather undoubtedly will flatten out the summer's driving boom, as is traditional. More new cars with higher engine efficiency and more smaller cars with reduced gasoline appetites also will have their continuing impact on the shrinking need for gasolines.

Another critical factor is what the OPEC exporters do in the third and fourth quarters of this year. For a while, it seemed as though the OPEC countries might make good on their pledges to hold the line on production. But despite all their agreements and meetings, production averaged about 1-million to 1.5-million b/d over first half quotas. Fears were expressed that the same thing may happen in the second half as Iraq, the United Arab Emirates and the Neutral Zone ignore their assigned quotas and produce more than is needed.

What all this means is that there will be excesses of 1.5-million to perhaps 2-million b/d of crude floating around looking for a home. That won't help matters domestically—especially on the East Coast where there are a number of brokers and entrepreneurs eagerly looking for bargains they can bring into the United States.

These factors prompted the federal government to raise one of the various red flags in late summer with this comment: "Very recent data on imports suggest that the United States is importing more oil than necessary to meet expected demand. If this is true, there may be excess stocks on hand in the fall, leading to generally weak prices."

It's going to be an interesting period for marketers that merits a watchful eye at all times. And if the situation in the Persian Gulf blows up, we'll be in an entirely new ball game. —*J. Richard Shaner*

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

JULY	Gasoline (All Types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$0.980	$0.921	$0.971	$1.115
Regions:				
Northeast	1.004	0.931	0.976	1.125
North Central	0.992	0.950	0.991	1.128
South	0.976	0.905	0.966	1.109
West	0.956	0.906	0.954	1.097

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	8/28/87	8/29/86
Gasoline (total)	226,536	216,322
Gasoline (Unleaded)*	135,227	112,552
Jet Kerosine	41,329	42,631
Distillates	123,538	130,128
Residual	43,437	41,244

**Included in gasoline total.*

Source: American Petroleum Institute.

NPN

NATIONAL PETROLEUM NEWS OCTOBER 1987

Gasoline Prices, Consumption Moving Up—But Only Modestly

Persian Gulf developments are causing erratic fluctuations in international and domestic crude oil activities but no significant changes in domestic supplies and prices are anticipated by the federal government.

The latest short-term energy forecast indicates anew that gasoline demand will average about 2% to 3% higher this year than last but will be relatively flat in 1988 [*NPN*—Aug.'87, p27]. Prices which hit the $1 a gal. level in the third quarter will average only 96¢ a gal. for the year. Next summer's average prices will be $1.03 to $1.04 a gal., with the year's average to be $1.02, according to government analysts.

About the best that can be said is that the era of cheap gasoline (i.e., product at less than $1 a gal.) apparently is over. Much depends on the volume of imports in the second half, however. Said the government: "Very recent data suggest that the United States is importing more oil than necessary to meet expected de-

(Continued on Page 30)

Consumer Survey Shows Resistance To Alcohol Fuels

A summer survey commissioned by Amoco indicates that American motorists have serious reservations about alcohol fuels as well as the federal and state subsidies to support such fuels.

Amoco also reported that it sent a detailed reply to a letter from Senator James McClure (R-Idaho), which implied that Amoco used negative campaigns against alcohol fuels.

The survey was conducted in June by National Family Opinion Research, Inc., and involved 5,500 questionnaires to motorists in approximately half of the states in the nation. (See related stories on Page 38).

The motorists were asked if gasohol should be subsidized. Nationally, roughly eight out of 10 respondents (78%) said "No." Only 18% said "Yes," according to the survey.

The negatives were even stronger in response to two additional questions about the federal government mandating use of alcohol fuels.

A total of 84% disapproved of a suggestion that at least one-half of the gasoline sold should be gasohol; and 92% rejected the idea that all motor fuel should be a gasohol blend.

According to the Amoco survey, many motorists who had used gasohol said they backed off because of engine harm or poor engine performance. In some states, 60% of the motorists gave this negative response. Minnesota was highest with 70%.

The Amoco survey report listed 14 states and seven major cities. Most were in its normal marketing area, including states that offered tax subsidies for gasohol. Amoco marketed gasohol in many of the states authorizing subsidies.

The states were California, Colorado, Florida, Illinois, Iowa, Kansas, Louisiana, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, North Dakota and South Dakota. Neither New Jersey nor New Hampshire have reported gasohol consumption in recent years but Amoco said these states were included for balancing purposes. Metropolises included were Chicago, Detroit, Los Angeles, Minneapolis, New York, St. Louis and Wichita/Topeka.

Among the big gasohol states not surveyed were Ohio, Kentucky, Indiana and Virginia which, along with Illinois, were the top five consumers in 1986.

Amoco said the national compilation indicated that more than 80% motorists were aware of alcohol fuels, 20% have tried it but only 4% were still using it. Of those polled in North Dakota, Iowa and Nebraska—basically agrarian states—more than half said they had tried gasohol and roughly 25% said they were still using it. On the other end of the spectrum, California, Colorado, Florida and Michigan were listed on the low side with only 6% or less of the motorists polled saying they were still using it.

Amoco released copies of an exchange of letters between Sen. James McClure (R-Ida.) and Amoco president L.D. Thomas, in which the Senator accused the oil company of "negative campaigns against alcohol fuels."

Thomas wrote: "We are not against the use of any alternative fuel if it meets the tests of economic viability, environmental compatibility and consumer acceptance. What disturbs us are moves toward government mandates of one or more particular alternative fuels which do not, in our

(Continued on Page 32)

Motorist Aversion to Alcohol Fuels

	No	Yes
Should gasohol be subsidized?	78%	18%
Should government require that one-half of all gasoline sold be gasohol?	84%	11%
Should government require all gasoline sold be gasohol?	92%	3%

	Aware of Gasohol	Have Used	Still Using
California	80%	15%	4%
Colorado	95%	29%	4%
Florida	87%	31%	3%
Illinois	91%	36%	14%
Iowa	98%	62%	25%
Kansas	93%	50%	13%
Louisiana	94%	51%	13%
Michigan	91%	38%	6%
Minnesota	95%	41%	11%
Nebraska	97%	56%	23%
New Hampshire	88%	11%	1%
New Jersey	84%	7%	0.5%
North Dakota	97%	53%	26%
South Dakota	97%	17%	14%

Gasoline Prices, Continued . . .

mand. . . If this is true, there may be excess stocks on hand this fall, leading to generally weak prices."

Distillate heating oil prices will be up materially over last winter—say 10¢ to 12¢ a gal. higher, on the average. However, for the year as a whole, they're likely to be under 1986's average of 84¢ gal.

Domestic crude oil production is still tabbed at a minus 400,000 b/d for this year and another 200,000 b/d next. International crude prices, despite the fluctuations, are not expected to average more than $19 bbl. in 1988. Net imports, which averaged 5.44-million b/d in 1986, are expected to be around 5.65-million b/d in 1987 and 5.96-million b/d in 1988.

Short-Term Forecast: The Movements are Snail-like

By The Years

	Projections		History		
	F.Y. 1988	F.Y. 1987	F.Y. 1986	F.Y. 1985	F.Y. 1984
DEMAND (million b/d)					
Motor Gasoline (total)	7.15	7.15	7.03	6.83	6.77
Leaded	1.60	1.78	2.18	2.43	2.78
Unleaded	5.56	5.37	4.85	4.41	3.99
% Unleaded	77.8%	75.1%	69.0%	65.0%	59.0%
Distillate Fuel Oil	2.94	2.90	2.91	2.87	2.84
Residual Fuel Oil	1.18	1.24	1.42	1.20	1.37
Total U.S. (a)	16.35	16.37	16.28	15.73	15.73
PRICES (per gal.)*					
Motor Gasoline**	$1.02	$0.96	$0.93	$1.20	$1.20
No. 2 Diesel	.96	.91	.88	1.15	1.5
No. 2 Heating Oil					
Wholesale	.55	.50	.49	.78	.83
Retail	.86	.79	.84	1.05	1.09
Residual***	.43	.41	.34	.61	.66

By The Quarters

	History 1987				Projections 1988			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
DEMAND (million b/d)								
Motor Gasoline (total)	6.70	7.35	7.38	7.20	6.81	7.32	7.31	7.17
Leaded	1.73	1.84	1.83	1.71	1.58	1.70	1.61	1.49
Unleaded	4.97	5.51	5.50	5.49	5.22	5.62	5.70	5.68
% Unleaded	74.2%	75.0%	75.0%	76.2%	76.7%	76.8%	78.0%	79.2%
Distillate Fuel Oil	3.20	2.59	2.58	3.03	3.37	2.79	2.57	3.03
Residual Fuel Oil	1.38	1.10	1.16	1.24	1.42	1.13	1.04	1.14
Total U.S. (a)	16.34	16.24	16.27	16.64	16.59	16.12	16.12	16.57
PRICES (per gal.)*								
Motor Gasoline**	$0.90	$0.95	$1.00	$0.96	$0.99	$1.03	$1.04	$1.02
No. 2 Diesel	.86	.89	.92	.94	.87	.98	.98	.98
No. 2 Heating Oil								
Wholesale	.50	.50	.50	.51	.55	.56	.54	.54
Retail	.78	.77	[illegible]	.83	.87	.85	.86	.89
Residual***	.41	.41	.40	.42	.44	.43	.43	.44

*Prices include taxes except No. 2 heating oil; **Average price for all grades and services; ***Average price for all sizes of sulfur. (a) Includes all oils.

Source: Energy Information Administration, Short-Term Energy Forecast, dated July 1987, published in mid-August.

Buyout Increases Petromark Reserves

Petromark Resources Co., Tulsa, Okla., will increase its proven reserves by roughly 1.4-million bbl. of oil equivalent and raise its daily production to more than 500 bbl. and 2.4-billion cu. ft. of gas a day with its recent acquisition of GKM, Inc., and its subsidiary, Twin Eagle Petroleum Corp. With the acquisition, Petromark operates about 600 wells in nine states, mainly in Texas, Oklahoma and Kansas. The GKM transaction is the Petromark's third acquisition in two years.

Charter Reports First Half Earnings

Charter Co., which operates Charter Oil Co., reported net earnings of $4-million in the second quarter of 1987 vs. $40-million in the like period of last year.

For the half, Charter said earnings were $5.9-million vs. $29.4-million in 1986. Extraordinary income and tax loss benefits accounted for much of the 1986 earnings. The company earlier this year extricated itself from Chapter 11 bankruptcy so the third quarter will be its first in the open since the spring of 1985.

Staten Island Terminal Changes Hands—Again

The old Chevron/Gulf terminal on Staten Island, N.Y., has still another new owner, this one little more than a month after the facility changed hands in July. Oxbow Corp., New York, a big blender-trader, purchased the terminal from Petroport, a subsidiary of Southville Oil, Long Island, which had previously bought it from Chevron for $12-million.

The terminal has about 88 storage tanks on 500 acres. Oxbow was quoted as saying it will use the terminal for public storage because it's "more economical to be a warehouser than a renter."

Industry Study Shows Improved Air Quality

An API study indicates that air quality in most U.S. metropolitan areas which are facing possible federal pollution penalties is considerably better than generally perceived. The study evaluates government data on ozone pollution in 25 major urban areas during the period from 1981 to 1985 and concludes that most of them were in compliance with ozone ambient air quality standards more than 99% of the monitored hours.

Consumer Survey, Continued . . .

view, meet those tests."

Thomas reiterated that Amoco has a major stake in alternative fuels, including coal and oil shale, and stated flatly: ". . .we have no vested interest in discouraging the use of ethanol or any other competitive fuel. However, as a participant in an extremely competitive business, we are concerned about economics and our customers. Amoco believes that government should not single out one alternative fuel for special subsidization or support. Technology and economics should be relied upon to identify the transportation fuels that can become the most viable alternatives to gasoline."

Trade Groups File Motion In State Ozone Case

Five petroleum industry associations—API, Sigma, NACS, PMAA and SSDA—filed a joint motion to intervene in a lawsuit initiated by the Conservation Law Foundation of New England, Inc. last March against the state of Massachusetts, state officials and the U.S. Environmental Protection Agency.

The suit takes issue with Massachusetts' implementations of federal ozone standards and with EPA's alleged lack of enforcement. And it claims there are contingency measures in the state plan which the state should carry out, among which is Stage II vapor recovery equipment at service station pumps. The suit also charges the state should stop issuing permits for construction of stationary sources of volatile organic compound emissions. This would be a construction ban.

An API spokesperson described the joint motion of the trade groups to intervene in this case as an opportunity, if granted, to argue against any court order resulting in mandatory Stage II regulations for Massachusetts and to argue against a state construction ban. With the motion now pending, API has learned that the Conservation Law Foundation told the court they will not oppose the groups' motion to intervene as long as they do not delay the case and as long as they limit the arguments to only the two issues in their motion. "We feel the outcome of this case could impact other non-attainment states that don't have Stage II," the API spokesperson said.

The Conservation Law Foundation could not be reached for comment.

Another group representing 2,800 Massachusetts manufacturers filed its own motion to intervene on June 8 and the court granted the motion on June 30. The Associated Industries of Massachusetts (AIM) represents petroleum companies with storage facilities, solvent users, solvent manufacturers and motor vehicle manufacturers among others in the state.

AIM argues that the current state implementation is acceptable and that any arguments to the contrary are due to Massachusetts receiving ozones from surrounding states where Federal regulations are not as stringent. AIM adds that it wants a chance to comment if the courts rule that tighter implementation guidelines need to be put into effect in Massachusetts.

"We do wholeheartedly welcome the filing for intervention by API and the other organizations," said G. Montgomery Lovejoy III, director of AIM's Energy and Environment Program.

"Our number one goal is to protect the integrity of the state implementation plan," Lovejoy said. "We would share API's concerns about non-cost effective controls placed on the petroleum industry."

Moody's Reviews Williams Companies

Moody's Investors Service has recently placed the securities ratings for the Williams Companies and its subsidiaries, Northwest Pipeline Corp. and Williams Natural Gas Co., under review for a possible upgrade.

The review was prompted by the announcement that Williams will sell three million shares of common stock and that the net proceeds from the sale will be used to reduce bank debt.

The rating agency will determine whether Williams' credit quality and financial flexibility will be improved with the sale of common stock.

Texaco Legal Fees Total $55-million

Prodded by a disgruntled stockholder, Texaco has admitted that legal fees in its running battle with Pennzoil Corp., have topped $55-million in the last 20 months. Pennzoil won a historic $10-billion plus verdict in a Texas Court in December 1985 because Texaco allegedly interfered in Pennzoil's purchase of the old Getty Oil Co. a year earlier. Texaco is now in Chapter 11 bankruptcy.

The $55-million represents retainers and fees for law firms and investment bankers. In addition, Texaco also must pay investment bankers who are advising its creditor committees. One of these is asking $125,000 monthly and the other $200,000 monthly. One of the law firms received an initial retainer of $1-million to get involved in the Texaco case.

Pennzoil has never indicated how much the legal costs have been in its fight with Texaco. There's no doubt it runs into the millions. The only question is how many.

In a separate matter, Texaco was sued by Exxon Corp. in late August in U.S. District Court in Houston for $123.6-million. Exxon claims this is Texaco's share of a $2.1-billion judgment it was forced to pay the U.S. government for allegedly overcharging customers for crude oil from the East Texas Hawkins Field, of which it was the operator.

A Texaco spokesman was quoted as saying that "we have a very strong case and will defend our position vigorously."

Virginia "Superstore" Adds Postal Box Unit

In addition to gasoline, groceries and deli food items, customers at the new 5,400 sq.ft. "superstore" recently opened by Fas Mart Convenience Stores, Inc. can also pick up their mail—at any time of day or night.

The design of the new store included sufficient space to contain a detached postal box unit for the Ashland, Va., area, near Richmond. The new facility is said to be the first "marriage" between a C-store and the U.S. Postal Service in Virginia. The union provides a much needed local postal unit for the Postal Service and increases daily customer traffic at the store, according to a Fas Mart spokesperson.

The leased postal section contains almost 600 letter boxes of various sizes and 20 parcel post boxes. A customer leasing a box has access to the facility 24 hours per day. Plans to add more postal customer services are being developed.

A close-by commercial/industrial park provides a strong customer base for C-store and postal business.

Also featured in the company's giant new store is a community meeting room which is offered to non-profit community-oriented organizations at no charge during evenings and weekends. It also doubles as an in-house corporate training room during the day.

Fas Mart, headquartered in Mechanicsville, Va., operates 19 C-store/gasoline outlets in Virginia, plus four pumper/kiosk facilities. Five additional C-store plus fuel outlets are currently under construction. The new outlets will average about 3,600 sq.ft. of store space and have sit-down deli food service.

The company markets Amoco, Citgo and some Chevron branded gasoline.

COVER REPORT

What's The Future Of Alcohol Fuels?

Blessed with a new array of raisons d'etre and endowed with a more positive image, good old-fashioned "gasohol" is in the midst of a contentious struggle in the motor fuel marketplaces to improve itself and its future; or, at the least, to hang on to what it's got.

There seems to be no question that alcohol fuels are going to be an increasingly controversial topic this year and next, especially on the national scene as office seekers and politicians milk it for its obvious voter appeal and federal regulators move in from different directions.

Gasoline marketers are anything but unanimous in their attitudes on alcohol fuels, with many independents proclaiming their virtues, others questioning them and many majors in outright opposition or obliquely looking down their noses at the product.

Federal and state tax exemptions, farm subsidies, national security and air pollution control strategies are going to be the principal bones of contention.

In an industry badly divided over the advantages and disadvantages of alcohol fuels, octane numbers and pump margins also are going to generate differences of opinion as the furor over oxygenated fuels and vapor pressures grow stronger.

Many majors dislike alcohol fuels because of quality-control problems in blending, product stability at retail pumps and price disadvantages in the premium grades between branded and unbranded volumes. The independents generally love the margin edges and equalizing octane numbers they can get by blending their own gasolines.

All this adds up to controversy—even question marks for alcohol fuels in the short-term future if tax subsidies continue to erode.

Business Booming?

The alcohol people say business is booming with at least one major manufacturer claiming that 1986 not only was the best year ever but that their own statistics are conservative and don't tell the whole story—yet.

The manufacturers anticipate further growth in alcohol fuels consumption in 1987, probably aggregating 8.14-billion gal. by the end of the year. That would be an increase of about 150-million gal. over 1986.

Controversy grows over taxes, terms and sales volumes

On the other hand, the Federal Highway Administration, which also collects and publishes gasohol data, doesn't share that optimism. Its data indicate that gasohol consumption peaked in 1985, declined in 1986 and, based on estimates for the first four months of 1987, may be in for further erosion this year, possibly as much as 5%. That would be a decrease of about 350-million to 400-million gal. below 1986 on its chart.

The gap between the two sets of figures projected by for 1987 is big—at least 500-million gal. and possibly as much as three-quarters of a billion gal. (See related chart on Page 41).

The alcohol industry data through the years has been consistently higher than the FHA numbers but so long as both were on the upward trail, little attention was paid to the disparities. Last year, the consumption totals diverged with the industry numbers on the plus side and the FHA totals slightly under the 1985 high. The differences, while not overwhelmingly disturbing, are enough to create puzzlement, however, over whether consumption of alcohol fuels is going up, down or merely standing still.

The problem obviously is in the data collection processes.

The industry statisticians use some of the FHA information and collect additional data through company sales reports, personal contacts with state officials and estimates for states which normally do not separate alcohol fuels from regular fuels tax summaries. This, they say, gives them more complete information than the government has.

FHA's gasohol reports basically come from the states as part of their regular reporting procedures. They concede that in some states where the tax on gasoline and gasohol are the same that some gasohol may be commingled with gasoline volumes. FHA analysts also note that some states are not geared up to separate the products. They feel, however, the gasohol volumes are "insignificant."

The alcohol manufacturers and the federal people do not see eye-to-eye on the product itself, either.

"Gasohol was a product of the late '70s," says a manufacturer. "It was pretty well an orthodox mix of 90% regular gasoline and 10% alcohol, generally, ethanol. Its original objectives were to extend motor fuel supplies which then were on the thin side and to impact on pump prices which were well over the $1 gal. range.

"What we're talking about now," he says, "is ethanol-blended unleaded gasoline and/or alcohol-enhanced unleaded gasoline—usually in the mid and premium grades. In plain and simple words, the nomenclature is alcohol fuels, not gasohol. There's a world of difference in the products and in the marketplaces too. Gasohol just isn't meaningful any more as a product classification."

FHA and some other government agencies continue to call the motor fuel "gasohol," however, and show no signs of backing away from that designation. So

WARNING
89
TEXACO
Lead-free
with Ethanol
TEXACO
Lead-free
with Ethanol

The relatively short-life span of alcohol fuels has seen product emphasis shift from insurance against shortages to octane enhancement, air quality improvement and farm surplus reduction.

does the American Petroleum Institute, the Petroleum Marketers Assn. of America, the Society of Independent Gasoline Marketers and other associations.

National Issues

Be that as it may, the marketplaces and the raisons d'être for ethanol-blends, methanol blends and other alternatives like MTBE are different now and more varied in their significance.

Where once the key consideration was the hamburger-helper idea of expanding basic supplies in a time of shortages, now there's a new array of reasons ranging from octane enhancement, better street economics, national security, air pollution control concepts and farm surplusses.

Illinois Leads States as No.1 Consumer of 'Gasohol'

Illinois motorists, who use more than 1-billion gal. of gasohol yearly, are the nation's top consumers of ethanol-laced gasoline.

However, over the past six years, Iowa has been No. 1 twice, Michigan once, Indiana once and Illinois twice.

Here are the rankings of the top five in recent years, according to Federal Highway Administration data:

State/Year	(Bil. gal.)
1986	
Illinois	1,286,828
Ohio	814,579
Kentucky	736,349
Indiana	668,638
Virginia	426,552
1985	
Illinois	1,065,454
Indiana	696,137
Ohio	691,669
Florida	581,364
Kentucky	556,478
1984	
Indiana	587,396
Michigan	577,723
Illinois	562,036
Florida	508,751
Ohio	495,595
1983	
Michigan	565,991
Indiana	525,076
Iowa	510,208
Ohio	489,292
California	480,850
1982	
Iowa	498,636
California	464,004
Illinois	251,200
Michigan	206,794
Oklahoma	155,053
1981	
Iowa	190,358
California	147,795
Michigan	65,530
Florida	60,357
Illinois	51,331

Source: Federal Highway Administration, Monthly Consumption Reports.

They are heating up as national issues with at least a half-dozen major bills in the congressional hoppers now, and such presidential aspirants as Vice President George Bush, Sen. Robert Dole (R-Kan.) and others endorsing the idea that alcohol-laced fuels will help agricultural and national interests by using up crop excesses, reducing farm-subsidy payments and simultaneously curtailing U.S. dependence on foreign oil. All of those items have special voter oomph in farm states and among environmentalists and those concerned about growing dependence on foreign oil, especially from the Middle East.

The Environmental Protection Agency also is in the forefront by extolling alcohol fuels as a palliative for atmospheric pollution problems in some areas, even though they raise Reid vapor pressure, which contributes to air problems. The fact that EPA is supporting the idea of alcohol fuels into the indefinite future is a sanguine sign for the hybrid industry.

Colorado has already taken a big step in moving to control carbon monoxide levels by mandating the using of alcohol fuels in the winter months, effective this coming Jan. 1. The state's Air Quality Control Commission estimates that with both ethanol and methyl tertiary butyl ether (commonly known as MTBE) in the marketplaces the new law will reduce ambient carbon monoxide levels by 14%. At the outset only the nine-county Denver area is affected but the supposition is that market patterns will over-run parts of Wyoming, Nebraska and South Dakota as well. How well the program goes will be watched closely by other regulators for possible emulation.

California also is another front-runner on methanol motor fuels. The basic difference between ethanol and methanol fuels is the quantity of gasoline in use. In ethanol, the blend is generally 90% unleaded gasoline and 10% alcohol; in methanol, generally 15% gasoline and 85% methanol. California has cut a deal with Arco and may do likewise with Chevron to operate a number of methanol stations to further test the product [*NPN*—Aug.'87, p18]. The big point is that because of California's traditional pioneering in air pollution strategies, this concept can be expected to infiltrate other states over the next 10 years or so. Some

'Gasohol is a product of the late 70s.'

industry people think methanol may be the fuel that eventually replaces gasoline as the fuel of mobility after 2000.

Among the plusses for methanol: It's a home-grown product that can be made from natural gas, coal and biomass; thus supply sources are almost unlimited, totally domestic and far removed from any dependence on foreign oil. Among the minuses: Car engines have to be modified, product storage is a hazardous problem, and utilized energy is only about half that of gasoline. In other words, two gallons of methanol are needed to equal one gallon of gasoline. But then what marketer wouldn't like to double his volume just to take care of the customers he has now?

Tax Subsidies

A key problem for alcohol fuels and the federal-state governments is the question of subsidies. It is generally agreed that subsidies made it possible for gasohol and alcohol fuels to enter the gasoline markets in the first place and to prosper through the 1980s to date. There is no real disagreement that without subsidies, alcohol fuels can not survive. They would wind up costing more at the retail pumps than conventional motor fuels and with surplusses of gasoline all over the place, there would be no economic way for them to hang on.

The federal subsidy is 6¢ a gal. Originally scheduled to die in 1992, its life has been extended beyond the year 2000. Unofficial estimates indicate that the subsidies cost the federal goverment about $440-million in 1985 alone. On a straight-line projection, this could mean that these subsidies would approximate $6.6-billion through 1999.

State subsidies have varied. At the moment, New Mexico is the highest with exemptions of 11¢ state and 6¢ federal for a total of 17¢ gal.(see related tax table on Page 49). Some states are reducing or eliminating the special exemptions for alcohol fuels, however. At the present time, fewer than a score of states are still continuing the practice—down about a third from the peak period.

These subsidies are what make the big differences in the marketplaces, however. One big independent in the Southeast, for example, says ethanol blending not only gives him a competitive octane number for his mid-grade and premium fuels but also an edge of 3¢ to 5¢ gal. at the pump vis à vis his branded opponents. Archer Daniels Midland, the nation's biggest producer of ethanol, cites studies which show how a Kansas jobber blended pool gasoline and boosted his 6¢ gal. margin to 13¢ gal. [*NPN*—Feb. '87, p28]. There are any number of independents who can cite similar gains.

One of the big stumbling blocks that slowed the growth pattern of alcohol fuels last year and some support of subsidies was the collapse of crude oil prices in late 1985 and early 1986. Sharp declines in street prices for regular gasolines coupled with some increases in alcohol costs simply erased competitive values.

"What you have to do is look at these subsidies in a positive, not negative, manner," an alcohol manufacturer spokesman says. Crude prices are higher, he says, and product prices have risen too—not much but nevertheless upward. "But we are not even considering the hundreds of millions of dolllars we are spending on the warships and the planes and the servicemen on special duty in the Persian Gulf protecting the oil supply lines. Subsidies at both federal and state levels are peanuts compared to those costs."

Some gasoline marketers complain, however, that alcohol suppliers have also sharply increased their prices. A Tennessee marketer says he is now paying $1.60 gal. for ethanol, double his price of a few months ago. "There is no way the alcohol manufacturers can justify a price hike of 80¢ gal.," he says, adding that such price increases coupled with the loss of state tax subsidies quickly wipes out the competitive advantages of alcohol fuels.

Political Concerns

The ethanol industry won what amounted to a landmark victory several months ago when the National Conference of Weights and Measures (NCWM) overwhelmingly adopted a regulation permitting 10% ethanol blends a waiver from ASTM volatility limits so long as the base gasoline meets

Seasonal Comparisons Show Minimal Change in Octanes

Unless there were significant changes this past summer, which was not very likely based on early reports from the marketplaces, the octane numbers of the basic grades of gasoline have been remarkably steady in the face of the stiffening competition for gallonage.

The National Institute for Petroleum and Energy Research, Bartlesville, Okla., noted in its most recent survey that the octane numbers for unleaded regular, unleaded premium and leaded regular were substantially unchanged in the tests made last winter vis a vis the comparable period of 1985-86.

About the only thing of importance in the gasoline/octane world—a factor which the prosaic research report will not catch up with for probably another year of two—was the relatively recent introduction of the unleaded midgrades by many companies in regional and national marketplaces and the accelerating trend toward an all-unleaded economy.

Otherwise, about the only discernible trend has been a slow growth in the octane quality of unleaded gasoline above 90.0. This has increased a half-octane number in the four year period of 1983-84 to 1986-87. Bear in mind, however, that these are only averages for random samples. Many majors and independents alike are marketing premium-grade unleadeds in the 92.0 range, and some, like Sun, guarantee a basic 93.5 grade. It is axiomatic, therefore, that in order to maintain these high averages, some companies are pumping gasolines as high as 95 to 99 octane into the distribution systems.

The survey is made semi-annually by the Institute under contract with the federal government and the API. The most recent one covered the winter of 1976-77 and was published in late June.

Here's a bird's eye view of the key findings:

	Winter 1985-86	Winter 1986-87
	(All R + M/2)	
Unleaded Below 90.0	87.3	87.2
Unleaded Above 90.0	91.8	91.8
Leaded Below 93.0	88.8	88.7
Unleaded Gasohol Below 90.0	88.4	88.7
Unleaded Gasohol Above 90.0	90.0	91.2
Leaded Gasohol Below 93.0	90.0	90.1

N.B. It should be noted that the samples tested in the gasohol survey were far fewer in number than the total involved in the conventional gasolines.

'Gasohol' Consumption by States—1981/1986

(millions of gal.)

State	1981	1982	1983	1984	1985	1986
Alabama	—	11,521	29,637	34,899	196,111	261,286
Alaska	—	—	—	—	—	—
Arizona	1,843	5,096	772	—	—	—
Arkansas	6,104	8,462	12,631	28,871	9,913	—
California	147,795	464,004	480,850	401,837	288,017	189,046
Colorado	9,200	23,990	56,562	82,233	273,553	70,463
Connecticut	9,495	4,461	1,476	5,421	16,409	5,323
Delaware	20	—	—	—	—	—
Dist. of Col.	20	34	52	84	22	205
Florida	60,357	103,053	357,232	508,751	581,364	315,527
Georgia	3,851	148	158	18	—	—
Hawaii	1,411	368	—	—	—	—
Idaho	—	2,464	8,747	8,067	21,167	22,016
Illinois	51,331	251,200	240,000	562,036	1,085,454	1,286,828
Indiana	—	120,559	525,076	587,396	696,137	668,638
Iowa	190,358	498,636	510,206	457,125	436,164	385,130
Kansas	14,100	7,448	67,396	273,077	281,617	232,604
Kentucky	2,507	18,872	100,646	328,238	556,478	736,349
Louisiana	—	—	—	24,424	123,597	336,187
Maine	1,287	—	—	—	—	—
Maryland	7,754	107	74	82	720	501
Massachusetts	4,517	290	56	—	—	—
Michigan	65,530	206,794	565,991	577,723	548,885	382,010
Minnesota	3,200	4,653	3,578	2,707	350,169	374,032
Mississippi	—	—	—	—	—	—
Missouri	—	—	6,996	13,860	18,756	—
Montana	473	10,170	11,326	10,181	8,079	3,454
Nebraska	31,072	89,698	183,345	208,455	242,367	216,356
Nevada	641	964	283	—	1,142	18,650
New Hampshire	1,149	—	—	—	—	—
New Jersey	1,680	—	—	—	—	—
New Mexico	—	1,082	26,589	63,756	75,502	58,752
New York	—	—	—	—	—	—
North Carolina	13,174	7,456	2,912	34,037	121,220	—
North Dakota	11,003	6,499	4,400	5,469	36,680	65,327
Ohio	9,632	91,679	489,292	495,595	691,669	814,579
Oklahoma	37,499	155,053	75,704	23,620	25,374	26,994
Oregon	—	2,073	1,370	298	168	—
Pennsylvania	—	—	—	—	—	—
Rhode Island	399	22	—	—	—	—
South Carolina	14,518	59,688	1,018	154	700	15,550
South Dakota	6,733	13,808	31,947	41,343	52,402	63,484
Tennessee	—	—	—	264,167	365,020	394,469
Texas	—	38,142	282,091	207,152	429,495	362,243
Utah	—	500	—	26,358	6,223	2,409
Vermont	—	—	—	—	—	—
Virginia	1,991	30,834	46,213	131,618	349,930	426,552
Washington	9,982	7,230	7,943	9,143	7,574	26,797
West Virginia	134	—	—	—	—	—
Wisconsin	—	2,718	1,046	1,962	15,069	15,312
Wyoming	846	259	202	309	281	55
Total U.S.	722,606	1,998,845	4,133,857	5,420,466	7,817,418	7,781,128

Source: Federal Highway Administration, Monthly Consumption Reports and Information Resources, Inc., internal reports.

ASTM specifications. ASTM is the national standards group whose findings are generally picked up by the state fire marshalls and regulatory bodies and implemented on local levels. This is the first time that the NCWM has endorsed adoption of EPA exemptions and standards for ethanol-blended fuels.

The NCWM resolution was strongly supported by the Renewable Fuels Assn. and a broad coalition of refiners, farm groups, independent gasoline marketers and others. It was vigorously opposed by American Petroleum Institute, Exxon, Amoco, Shell, Marathon, Chrysler, General Motors and others.

In Congress, there are at least a half-dozen pro-ethanol-type bills awaiting consideration. These call for the mandating use of alcohol fuels in the future starting with as little as 1% of ethanol in 1988 and arriving generally at 10% in the early 1990s; at least one also proposes up to 5% methanol by 1988.

API, PMAA and other groups take somewhat neutral positions on such proposals. Their basic objection is to the "mandate" aspect of determining the composition of fuels. That, they say, should be up to the marketplaces themselves to determine.

More proposals are expected this fall and early next year.

The federal agencies, including EPA, Department of Energy and the Department of Agriculture, also are involved both in studies and recommendations affecting alcohol fuels. One to keep an eye on is a DOE study of the costs and benefits of alternative fuels in the transportation system. It is taking in such considerations as cost-effectiveness and national security. It's scheduled for release sometime next summer. Another study of significance involves a questionnaire sent out by DOE's Office of Alcohol Fuels to suppliers and marketers soliciting information on corporate practices and personal attitudes about alcohol fuels and government policies about promoting them. Two USDA efforts currently include a reappraisal of a 1986 study which concluded that subsidies were more beneficial to farmers than ethanol tax breaks—a finding that produced strong alcohol industry protests—and a feasibility study on possible establishment of a Strategic Ethanol Reserve. This report is expected out soon.

The whole concept of alcohol fuels is fraught with controversy and significance. For many marketers, just keeping up with

In its heyday in the late 70s, "home grown" gasohol was as much a national political issue as it was another street blend, a situation that set the stage for extensive tax breaks.

Regional Octane Numbers, Winter 1986-87

Two winters ago, the surveyors added alcohol-enchanced gasolines to their semiannual reports. The gasohol reports are on the sketchy side, however, inasmuch as only 150 or so samples are tested nationally versus the 1,500 or so samples of conventional grades. The gasohol numbers are included in the regional report which follows:

(All grades are R + M/2)*

	[Conventional Gasolines]			[Alcohol Gasolines]		
	Unleaded		Leaded	Unleaded		Leaded
Regions	**Below 90.0**	**Above 90.0**	**Below 93.0**	**Below 90.0**	**Above 90.0**	**Below 93.0**
Northeast	87.4	92.3	89.3	NS	NS	NS
Mid-Atlantic	87.3	92.2	89.2	89.9	92.3	91.2
Southeast	87.4	92.1	89.2	NS	91.3	91.1
Appalachian	87.3	92.3	89.2	88.4	90.6	90.9
Michigan	87.0	92.2	89.1	87.1	90.2	89.0
N. Illinois	87.2	91.7	89.3	88.2	90.9	89.5
Cent. Miss.	87.2	91.4	89.2	87.9	92.6	90.0
Lower Miss.	87.2	91.7	89.1	88.7	91.9	91.2
North Plains	87.2	92.0	88.4	NS	NS	88.6
Cent. Plains	87.1	91.0	88.3	88.6	90.7	90.3
South Plains	87.5	91.7	88.7	NS	90.0	91.2
South Texas	87.4	91.9	89.2	NS	NS	NS
S. Mt. States	86.9	91.5	87.7	87.7	90.4	88.2
N. Mt. States	86.0	91.2	86.9	88.9	90.6	NS
Pac. N'west	87.2	91.9	88.1	NS	NS	NS
N. Calif.	87.8	92.0	88.3	88.6	92.4	89.4
S. Calif.	87.7	92.0	88.3	NS	NS	NS
U.S. averages (winter seasons)						
1986-87	87.2	91.8	88.7	88.4	91.2	90.1
1985-86	87.3	91.8	88.8	88.4	91.6	90.0
1984-85	87.4	91.6	89.1	NA	NA	NA
1983-84	87.3	91.3	88.8	NA	NA	NA

NS = No samples; NA = not available.

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* Federal formula for combining research and motor method numbers and dividing the total by two to obtain a common denominator for octanes.

Source: Motor Gasolines, Winter 1986-87, National Institute for Petroleum and Energy Research, Bartlesville, Okla.,

Constraints will limit market applications

developments or understanding what they're all about are difficult agenda items. One report that will help them is an exceptional study by PMAA this past summer. Entitled "Alcohol Fuels: Environmental Impacts, Economics and Policy Implications," it provides good backgrounding as well as reciting pros and cons of key issues.

One conclusion it reaches:

"Ethanol and methanol are both potential contributors to our nation's energy supplies. Each fuel deserves continued attention in terms of research and development, both for improvement of existing technology as well as for solving outstanding technical problems.

"Different constraints will limit wider market applications for ethanol and methanol in the near future. It is doubtful, however, that large government subsidy programs are the most effective means of achieving broad commercialization of alternative transportation fuels."

Conflicting Data On Blended Fuel

Although both sides have plausible reasons why the other is probably in error, there are substantial gaps in the ethanol-blend consumption data compiled by the alcohol industry and the federal government—something like three-quarters of a billion gal. right now.

The alcohol data, compiled by Information Resources, Inc., of Washington, D.C., indicates that ethanol-blended gasoline consumption has been climbing steadily since the early '80s. In 1986, this group says, consumption exceeded 7.99-billion gal., and projections for 1987 indicate it'll top 8.14-billion gal. by Dec. 31.

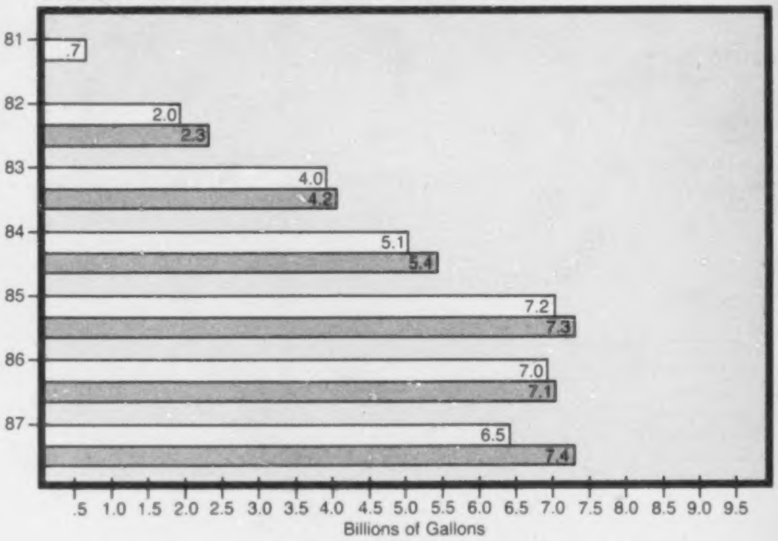
On the other hand, data collected by Federal Highway Administration, says 'gasohol' consumption peaked at 7.81-billion gal. in 1985, slipped to 7.78-billion gal. in 1986, and—based on preliminary reports and estimates for the first four months of this year—seems to be headed for a level around 7.36-billion gal., also by Dec. 31.

Alcohol industry people enthusiastically support the Information Resources data, claiming that it collects consumption data that the FHA reports miss entirely. FHA concedes that some ethanol-blended gasoline may be commingled at times with conventional gasoline data and that some states are not geared up to report "insignificant" volumes, but that its numbers are basically sound and supportable.

The two are far apart on semantics, too. Alcohol industry people say 'gasohol' is a 1979 word that doesn't mean anything any more; that the appropriate designation is ethanol-blended gasoline. The FHA and other government agencies still use 'gasohol' regularly.

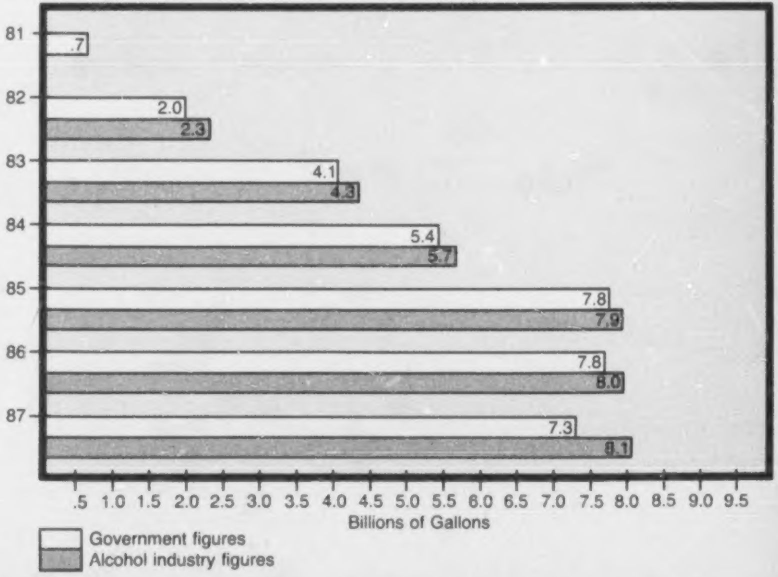
Here's an over-all view of the conflicting numbers:

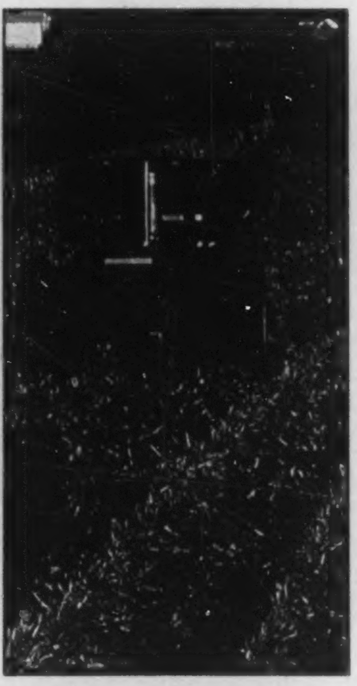
Market Share of Alcohol Blended Fuel



% of U.S. Gasoline Consumption

Alcohol Blended Fuel Consumption





Gasohol's Tax Breaks: From 6¢ to 17¢ gal.

Not all states grant special benefits to gasohol but since the federal government is across the board with a minimum of 6¢ gal., there is just no way to escape it. State and federal benefits range up to 17¢ gal. in New Mexico. All told, 20 states give gasohol a helping hand. In 1985, these tax exemptions cost the states $219-million in lost revenues and the federal government another $440-million, for a grand total of $659-million in that year alone.

The federal exemption had been scheduled to expire in 1991 but recently was extended to 1992. There's at least one bill in Congress now to extend the exemption beyond the year 2000. If the federal exemption continues through 2000 on the same rule-of-thumb costs that prevailed in 1985, the revenue losses by that time will have exceeded $6-billion. State losses would be in the neighborhood of $3-billion.

Here's a state-by-state rundown of gasoline taxes and ethanol-enhanced fuel exemptions in effect July 1, 1987 and the cost in revenues to the states in 1985:

	Fed/State		State
State	Gasoline Taxes (7/1/87) (¢ per gal.)	Gasohol Exemption (7/1/87) (¢ per gal.)	Revenues Lost In 1985 (Mil. $)
Ala.	22	9 (a)	$5.88
Alas.	17	14	—
Ariz.	25	6	0.94
Ark.	22.5	6	—
Calif.	18.0	6 (b)	—
Colo.	27	6	11.91
Conn.	26	7	0.16
Del.	22	6	—
D. of C.	24.5	6	—
Fla.	18.7	8	17.98
Ga.	16.5	6	—
Haw.	20	6	—
Ida.	23.5	10	0.85
Ill.	22	6	—
Ind.	23	6	—
Ia.	25	7	6.49
Kans.	20	9	12.63
Ky.	24	6	19.48
La.	25	6 (c)	19.78
Me.	23	9	—
Md.	22.5	6	0.22
Mass.	20	6	—
Mich.	24	6	13.58
Minn.	26	8	13.15
Miss.	18	6	—
Mo.	16	6	—
Mont.	26	6 (d)	0.36
Neb.	28	9	9.67
Nev.	22	7	—
N.H.	23	6	—
N.J.	17	14 (a)	—
N.M.	20	17 (a)	8.31
N.Y.	17	6	—
N.C.	24.5	6	5.98
N.D.	22	14	2.4
Oh.	21	6 (d)	17.17
Okla.	19	6	—
Ore.	21	6	—
Penna.	21	6	—
R.I.	24	6	—
S.C.	22	12	—
S.D.	22	8	1.73
Tenn.	26	10	11.8
Tex.	24	10	10.85
Utah	28	6	—
Vt.	22	6	—
Va.	26.5	6 (e)	27.99
Wash.	27	7.8 (a)	0.14
W.Va.	19.5	6	—
Wis.	27	6	—
Wyo.	17	6	—
Totals			
State	—	—	$219.45
Federal	—	—	$440.00
Fed/State	—	—	$659.45

(a) Exemption applies only to alcohol produced within the state.

(b) Excise tax on ethanol or methanol fuels containing not more than 15% gasoline is one-half the use fuel tax rate from 1/1/82 to 1/1/89.

(c) In Louisiana, gasohol exemption was repealed 9/1/86 and replaced with a producer's incentive credit of $1.40 gal. of ethanol.

(d) A dealer is refunded 25¢ gal. for ethanol and methanol blended with unleaded gasoline.

(e) In Virginia, exemption was repealed 7/1/86 and replaced with a producer's incentive credit of 60¢ gal. of ethanol.

What the Future May Hold For Gasoline Composition

Gasoline marketers take the heat if motorists are unhappy with the gasoline they buy, but the government, refiners, auto makers and others make the decisions on what kind of product it will be.

It should come as some consolation to marketers that gasoline composition, which has been up in the air for two decades, seems finally to be settling down.

As a sign of the growing calm, most refiners have stopped predicting gasoline shortages and other dire calamities as a result of new requirements being forced upon them by regulators and auto makers. Refiners are finding octanes they didn't seem to know they would have.

With all of the changes that have taken place, a research firm has undertaken to evaluate motor fuel composition and forecast what it is likely to be to the year 2000.

The industry-funded project by Southwest Research Institute (SwRI), San Antonio, Texas, began in April 1987 and will be completed in April 1988.

SwRI has reported some preliminary conclusions about fuel-composition trends.

Emerging Grades

With the lead phasedown scheduled to be essentially completed at the start of 1988, three unleaded grades have emerged: regular unleaded (RU), middle unleaded (MU), and premium unleaded (PU). A very-low-lead regular (RL) may remain in the picture for a while, depending on federal policy.

There has been a burst of PU sales the past year as gasoline prices have come tumbling down and motorists have increasingly tried something better than the standard 87-oct. RU. With nothing in between, motorists had no choice but to buy PU, usually 92 oct.

As the marketing of 89-oct. MU spreads, many motorists are finding that product adequate to eliminate engine knocking in most circumstances, and cheaper than PU.

SwRI expects the surge of PU sales to fade. Speaking at the SIGMA convention in San Diego earlier this year, Brent K. Bailey, SwRI senior research engineer and project manager, said:

"There's been a tremendous increase in the use of unleaded premium in the past six to nine months. We believe this is going to be a short-lived thing.

"Unfortunately, this is a high-margin product and many of you are benefiting from that, but as the price of gasoline rises, we believe that the unleaded midgrade will assume some of this market demand.

"Right now, the vehicles that are out there have an option: either to use an 87-oct. unleaded or go to what is generally a 92-oct. unleaded product. If their cars have an octane appetite of say 88 or 89, they have no choice but to go to 92. With the emergence of the unleaded midgrade, we think this will suck off some of unleaded premium demand we're seeing right now."

Presto: More Octanes

When the U.S. EPA ordered a lead phasedown in 1985, scheduled to be accomplished in 1988, many refiners said it would create an octane crisis. There would be gasoline shortages, some said, and some refineries would not survive the transition.

This hasn't happened.

In 1970 the clear (unleaded) octane pool in the United States was 84.6 numbers, reports SwRI. This dropped to 84.1 oct. in 1975. It has increased since then, to 86.0 in 1980 and 87.2 in 1985, and is projected to rise to 88.1 in 1990.

Says Bailey, "The refiners have been pleasantly surprised the past year that they've been able to meet this kind of octane demand already without much in terms of capital investment, just by adjusting their processing conditions and their blending techniques. They already have what we're projecting as the octane demand for 1990.

"Less than a year ago, many refiners were very concerned about where they were going to get all the octanes. Much of that problem has been solved. Looking at the grade splits we have now, there seems to be enough octane. There are some refiners, however, who are still scraping to get enough octane to meet their demand."

Some of the factors contributing to lower octane demand than had been anticipated are: lead banking [*NPN*—April '86, p12], fewer vehicles requiring leaded gasoline, a decrease in the octane quality of RU and the use of an unleaded midgrade that captured some PU sales.

Bailey says, too, there's been "less octane giveaway in recent years," meaning refiners and blenders are not making, and marketers are not selling, as much gasoline of higher octane than motorists need.

He says additional octane relief would result if MMT, a manganese antiknock compound, could be used to replace lead in certain circumstances, which he termed a possibility. He reports, "MMT is a major blending component in Canada, in both leaded and unleaded gasolines."

Enter Detergents

Detergents seem to have solved the problem of clogging port fuel injectors, but may be causing other problems, SwRI reports.

"The biggest change in gasoline composition, which has occurred just this past year," says Bailey, "is the addition of detergents across the board in gasoline. It's indeterminate what the outcome is going to be.

"It appears the port-fuel-injection problem has been solved by the addition of these detergents. However, some of the deposits are forming downstream on the valves. The deposits have shifted from the injectors to the input manifold and into the valves, and there's a possibility these deposits could be forming in the combustion chambers. Those could have a drastic effect on the octane appetites of the vehicles.

"As the deposits build up in the combustion chamber, the octane appetite also grows because of the compression-ratio increase. The deposits in the combustion chambers can also form hot spots that cause knock."

Bailey says this problem will have to be watched closely to see if detergents are increasing octane requirements. Octane requirements are studied annually by a joint interindustry group.

Grade Ratios

One of the most important questions for gasoline marketers is the future grade ratio: that is, the proportion that will be sold of each grade. A ratio of 1:1:1 means sales are divided equally among all three grades, whatever they may be. Ratios are, of course, approximate and are calculated by *NPN*.

Station layout and island configurations are determined to a large extent on the basis of expected grade sales ratios.

The ratio in 1995, based on SwRI projections, will be 6:1:1 (RU:MU:PU). This means the amount of RU sold is expected to be approximately six times the amount sold of either of the other two grades. In other words, an eight-pump station should theoretically have six pumps of RU and one each of MU and PU.

The accompanying graph shows the actual U.S. grade sales percentages for 1980 and 1985, and the projected ones for

1990 and 1995. Note that PL disappears between 1980 and 1985, and MU appears and RL disappears between 1985 and 1990.

Grade ratios are based on the sales percentages shown in the graph. The grade ratio in 1990 would be 3:1:1 (RU:MU:PU). The ratio in 1985 was 2:3:1 (RL:RU:PU). The ratio in 1980 was a complicated 10:7:1:2 (RL:RU:PL:PU).

Health Concerns

EPA is by no means finished regulating gasoline composition, and probably the biggest unknowns hanging over gasoline are what EPA will decide to do.

Because of the need for more octanes, aromatic content of gasoline has increased markedly since the early 1970s—from 22% in 1970 to 35% today and rising. Bailey reports EPA is studying whether aromatics are carcinogenic. If some are banned, octanes would have to be obtained some other way.

Further octane reduction would occur if the amount of butane, one of the highest-octane blending components, has to be decreased. Butane is highly volatile, meaning it evaporates easily into the atmosphere. The volatility of gasoline has been increasing steadily, in both winter and summer. EPA is considering limiting the volatility of gasoline in the summer, in which case some or all butane would probably have to go.

With gasoline volatility steadily rising, Bailey believes EPA will limit volatility to 9 lb. (Reid vapor pressure) in the summer across the board.

This is the current requirement in southern California and effectively bans the use of ethanol from May to September. Unless EPA grants ethanol a waiver, gasohol, which is a mixture of one part ethanol and 9 parts gasoline, will have to go.

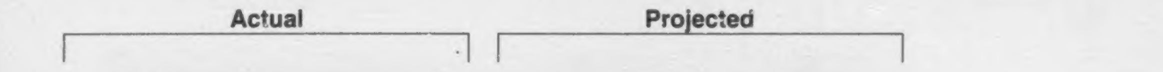
Methanol: Fuel Of Tomorrow?

Bailey says the question of using methanol widely as a motor fuel in this country is not simply like that of the chicken and the egg: the chicken being the vehicle that can run on neat of near-neat methanol fuel, and the egg being the distribution system to make the fuel available.

Another problem is methanol capacity, he says. "Right now the total methanol capacity in the U.S. represents about 1% of the total gasoline demand, and the vast majority of this methanol has already been earmarked for use in chemical markets. So there's only a small fraction of methanol available."

He concludes, "We don't see methanol coming into substantial use as a replacement for gasoline until certainly after the end of this century. All three of the major car manufacturers agree that methanol is the best alternative at this time, but this will not come about until the economics of methanol production improve, or until some kind of political mandate causes methanol to replace gasoline."

U.S. Gasoline Sales Percentages by Grades, 1980-1995



Source: Southwest Research Institute, San Antonio, TX.

OSHA Benzene Ruling Heats Up Bulk Storage Issues

For the beleaguered bulk plant owner, the jury is still out on the cost of OSHA's new benzene regulations.

On Sept. 1, the Occupational Safety and Health Administration issued "a new standard to reduce the permissible worker exposure level in all industries where benzene is used from 10 parts per million parts of air (10 ppm) to 1 ppm averaged over an eight-hour workday. The final benzene standard will become effective 90 days after the September publication in the Federal Register," cites a release from OSHA.

"The colorless, highly flammable liquid used widely as a solvent in the chemical, printing, rubber and petroleum industries is the culprit—with 95 of every 1,000 workers who face daily exposure to benzene on the job under the current standards likely to develop leukemia," OSHA has estimated.

In addition to reducing the permissible exposure level, provisions of the standard cover methods of compliance, personal protective equipment, employee monitoring, medical surveillance, medical removal protection, communication of hazard information to employees, regulated areas and recordkeeping.

(Copies of the new standard can be obtained by sending a self-addressed mailing label to the closest OSHA Regional Office listed in phone directories under the U.S. Department of Labor, or to the OSHA publications office, Room N3101, 200 Constitution Ave., NW, Washington, D. C. 20210.)

Overview

The OSHA Office of Public Information plans to offer a "simplified booklet," to help clarify the lengthy document, and the following is an initial overview from an OSHA spokesman as it pertains to bulk plant owners:

Bottom line: Bulk wholesale storage facilities which already have installed vapor recovery equipment are exempt from the benzene standard. However, if they do not have it, owners must take an initial measurement of the benzene levels.

—If exposures are below .5 parts per million, (ppm), then no further action is required.

—If exposures are between .5 ppm and 1.0 ppm, then the employer has two options: He can reduce exposures to below .5 ppm (which according to OSHA could probably be accomplished through a revision of work practices). Or, if the employer does not wish to do that, he can provide "medical surveillance," for his employees, which includes an annual physical with a complete blood count and remonitoring once a year.

—If exposures are over 1.0 ppm, the employer must reduce employee exposure to under 1 ppm.

—If exposures are over 1.0 ppm only for maintenance workers, the employer could use respirators, says OSHA. This, of course, would not apply to production operations where personnel would continually be loading and unloading product.

All of the above, OSHA maintains, could be attempted before resorting to vapor recovery to reach the acceptable limits.

OSHA's experts maintain that improved work practices and good housekeeping could solve many borderline problems. According to OSHA, it's "conceivable," that some owners might have to install vapor recovery, but not that many would be affected.

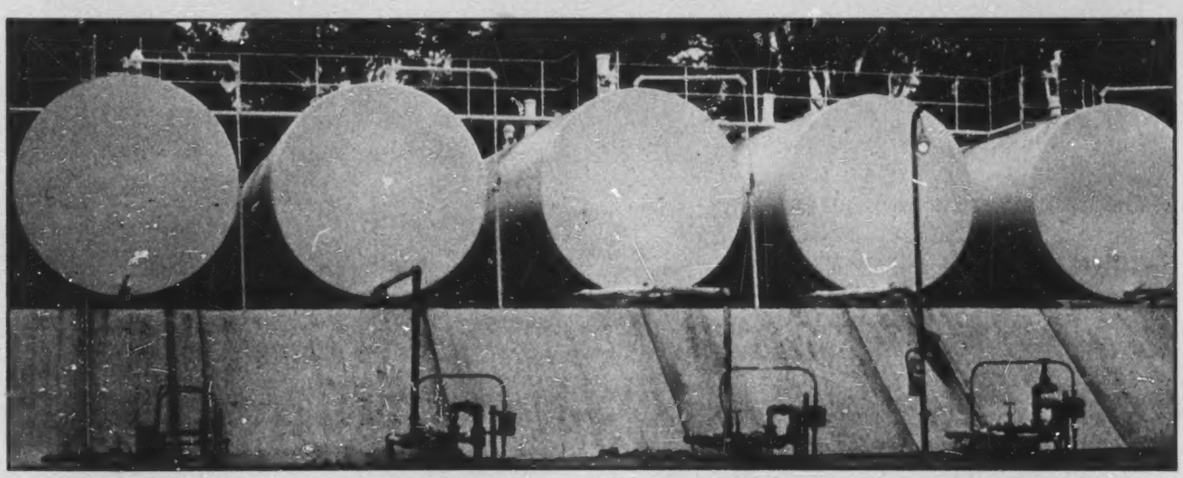
There's good news for everyone involved in the storage, transportation, sale, dispensing and use of gasoline after it leaves a bulk plant. OSHA has exempted just about all facilities from the bulk tanks out in its proposed regs. The agency found that benzene exposures in retail service stations, for example, were well below its proposed "action level" of 1.0 ppm.

Reasons cited included the facts that service station dispensing work is outdoors, that most gasoline nowadays is pumped by motorists at self-serve islands rather than attendants, and that the retail sector is characterized by a largely "transient" work force, making it difficult to implement requirements for medical surveillance and training.

Reactions

Phil Chisholm, executive vice president, Petroleum Marketers Assn. of America (PMAA), says it remains to be seen how many of the nation's estimated 15,000 bulk plant operations will be affected—especially the smaller rural owners.

"It is another nail in the coffin," he says, "but whether it's the final nail for some of the smaller owners remains in



Bulk plant operators who do not have vapor recovery equipment could face sizeable expenditures as the new OSHA benzene regs go into effect. However, they'll have more than two years to install any required "engineering controls," OSHA says.

SUMMARY OF ESTIMATED TOTAL ANNUALIZED NONENGINEERING COSTS ASSOCIATED WITH THE REVISED STANDARD
(1983 DOLLARS)

	Provision						
Industry	Regulated Area	Exposure Monitoring	Compliance Program	Respirator Use	Training	Medical Examination	Total Annual Costs
Petrochemicals	7,500	255,000	4,500	153,000	0*	117,700	538,200
Refining	11,800	279,400	7,100	414,000	0*	1,211,800	1,924,100
Coke and Coal chemicals	2,100	62,900	1,200	130,500	0*	56,500	253,200
Bulk Terminals	11,500	377,400	28,700	91,800	0*	52,100	561,500
Bulk Plants	65,200	2,325,000	163,300	521,800	951,800	830,900	4,858,000
Trucks	N/R	51,600	7,800	N/R	261,300	122,200	462,900
Tire	N/R	N/R	N/R	N/R	N/R	209,900	209,900
Total	**98,100**	**3,351,500**	**212,600**	**1,311,400**	**1,233,100**	**2,601,100**	**8,807,800**

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis.
*OSHA assumed to be in compliance.
N/R = OSHA assumes that these provisions are not required.

question. When everyone, including myself, has had a chance to review the final regs to determine exactly what's going to be required, each and every individual bulk plant operator is going to have to determine what's needed for their particular operation."

Chisholm feels there are a still lot of unanswered questions. "Despite the clear exemption of above ground storage facilities currently using vapor recovery, there are many rural facilities serving agricultural areas and small service stations where vapor recovery has never been required and never been implemented."

A bulk plant consulting engineer, John Storb, P.E., president of Storb, Inc. in Pennsylvania, estimates that a new vapor recovery unit alone could cost $150,000. If you add in the costs for the minimum three-arm installation, a small rural plant could end up paying a total of $250,000.

According to OSHA sources, bulk storage facilities needing "installation of engineering controls" (which could include vapor recovery) will have 27 months to comply after the date of publication of the proposed regs, which is Friday, Sept. 11.

"I guess it's not all bad news," says Chisholm. "OSHA appears to have constructed a good compromise by creating alternatives to vapor recovery such as monitoring procedures and modifications of work programs, and medical monitoring for employees. . .but who's going to pay those additional costs?"

An OSHA spokesman says that monitoring equipment required for this procedure, (described in the Federal Register), is very expensive and since the smaller tank owners can rarely afford this outlay, it will probably be more economical for them to get an industrial hygienist or a certified lab technician to initially make the test as OSHA did while assembling the regulations.

An OSHA contractor estimated that the yearly cost of maintaining the standard (includes monitoring equipment service, medical costs, etc.), would run an average of $450 per facility.

As an additional cost-cutting measure, the OSHA spokesman suggested that interested owners check with their individual states for consultant services which may be under contract to the federal government and who may be able to do the initial monitoring without charge.

Cutting Losses

This newest rulemaking appears to be just one more chapter in the "never-ending battle" that continues to plague bulk plant owners. This includes volatile gasoline pricing, safety and pollution insurance issues as well as proper maintenance.

Wayne Hughes, general marketing manager for Federated Insurance, sees "loss prevention" as the key to cutting industry costs:

"There doesn't seem to be a lot of new

ESTIMATED TOTAL ANNUALIZED COSTS ASSOCIATED WITH THE REVISED BENZENE STANDARD
(MILLIONS OF 1983 DOLLARS)

Sector	Total Annualized Engineering Costs	Total Annualized Nonengineering Costs	Total Annualized Costs
Petrochemical	5.1	0.5	5.6
Petroleum Refining	2.1	1.9	4.0
Coke and Coal Chemical	6.8	0.3	7.1
Tire Manufacturers	1.0	0.2	1.2
Bulk Terminals	0.2	0.6	0.8
Bulk Plants	N/A	4.9	4.9
Tank Truck	N/A	0.5	0.5
Total All Sectors	**15.3**	**8.8**	**24.1**

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis.
N/A = Not Applicable (i.e., OSHA assumed that compliance with these provisions will not be required).

'I guess it's not all bad news,' says PMAA's Chisholm

OSHA came up with a good compromise by creating alternatives to vapor recovery, an industry spokesman says.

above ground tank insurers coming into the market anymore, but those that are already present seem relatively comfortable with regular liability exposure. We insure about 8,000 petroleum marketers nationally—both those with above ground and below ground tanks.

"Pollution liability exposure is still very volatile. However, policies are available covering such issues as overspill and leaks.

"We continue to have some losses in the explosion area. Again, it seems that safety and loss control are paramount for any petroleum marketer who's interested in minimizing his chances of loss.

"Here's a few things we are currently recommending to people with above ground storage tanks: Older tanks should be lined. If they aren't, you'll pay more premiums. We also think that tanks should be on concrete saddles, because although rust and corrosion can still occur, we think the loss can be discovered sooner. In short, following the safety codes for the National Fire Protection Assn. (NFPA 30) make the tank owner's liability more affordable and more available.

"As part of its loss-prevention program, Federated offers its customers a very useful booklet designed to simplify the NFPA 30 codes for easy compliance," says Hughes. It covers such crucial safety features as loading racks, bonding and grounding, pumping and piping systems, venting and drainage and diking.

The installation of impervious diking, though necessary to meet regulations, places yet another burden on the tank owners budget: Rick Romero, vice president and field equipment engineer for J-8 Equipment Co., sees it as "replacing one potential problem with another potential problem. The impervious dike was, of course, designed to protect the groundwater. But if you have a spill, the dike now becomes an open tank with the potential for any spark to create a dangerous fire. It's a tradeoff, at best."

Looking at the economics of tank ownership in today's market, Phil Chisholm observes, "I think what small tank owners have got to do is find themselves an economic niche that only their bulk plant can serve. It might be the agricultural community, it might be small load, it might be heating oil accounts, but it has to be an area that can't be served by anyone else.

"Of course," he says, "for those in a speculative mood, there's always going to be the time when they wish they had a bulk plant. Let's face it, everyone would love the luxury of storing it away and having it on hand when the market goes up. A lot of people used to play that game in the past, but sadly, they don't need terminal facilities to do that anymore.

ESTIMATED ECONOMIC IMPACTS OF THE BENZENE STANDARD ON AN AVERAGE FIRM IN EACH INDUSTRY SECTOR

Industry	After-Tax Profit Decline of an Average Firm in Each Industry If Revenues Are Unchanged (Percent)	Increased Revenues Required to Offset Fully the Compliance Costs of an Average Firm in Each Industry (Percent)
Petrochemical	1.64	0.07
Petroleum Refining and Bulk Terminals	0.04	<0.01
Iron and Steel	0.24	0.02
Tire Manufacturers	0.31	0.01
Bulk Plants	0.61	<0.01
For-Hire Tank Trucks	0.46	0.01

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis.